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Pharmacy and the Law – Controlled Substances

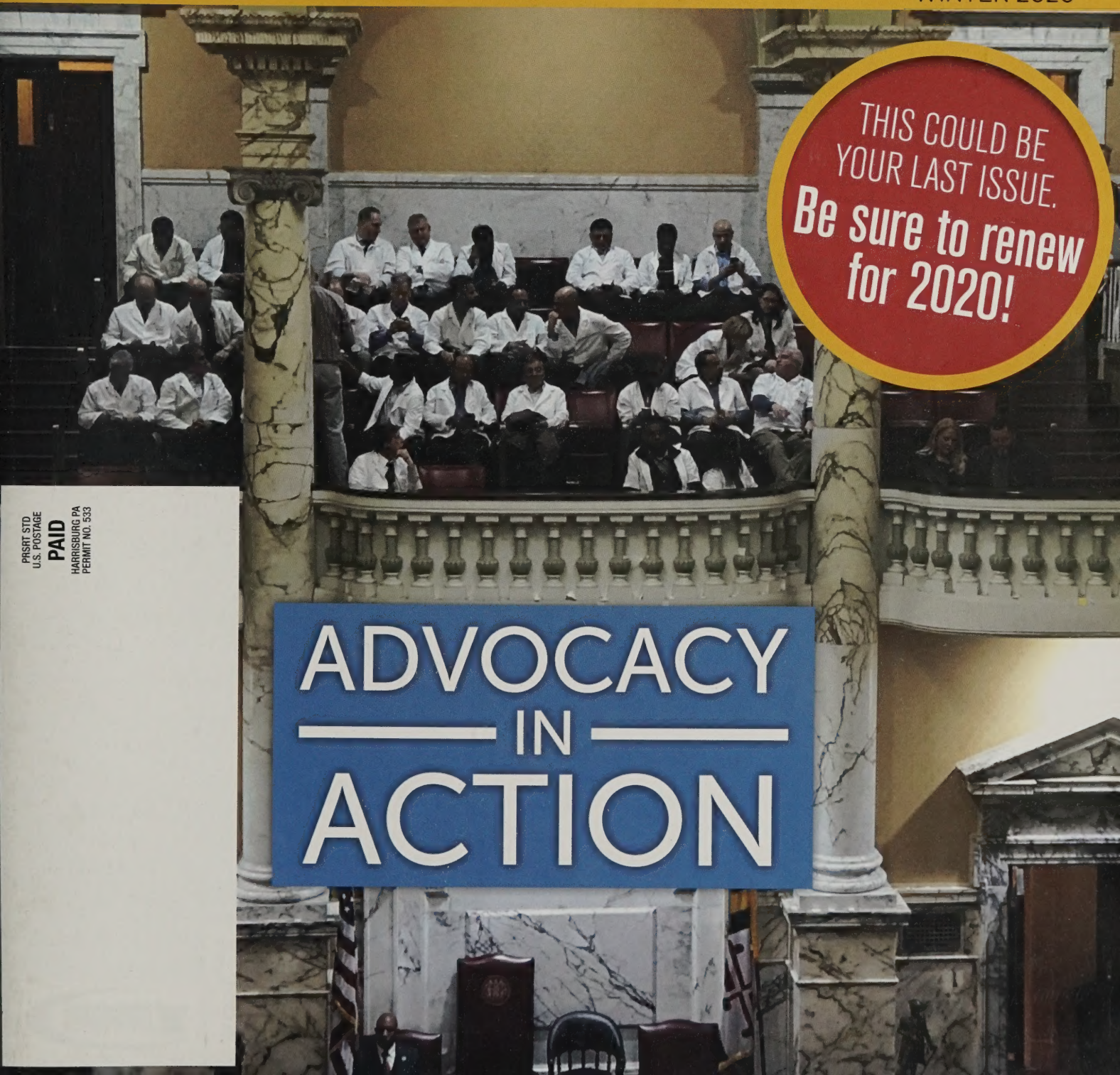
2020 Legislative Priorities

MPhA News
138th MPhA Annual Convention

Continuing Education
Breathe Easier – Pediatric Asthma Management Refresher

Maryland Pharmacist

WINTER 2020



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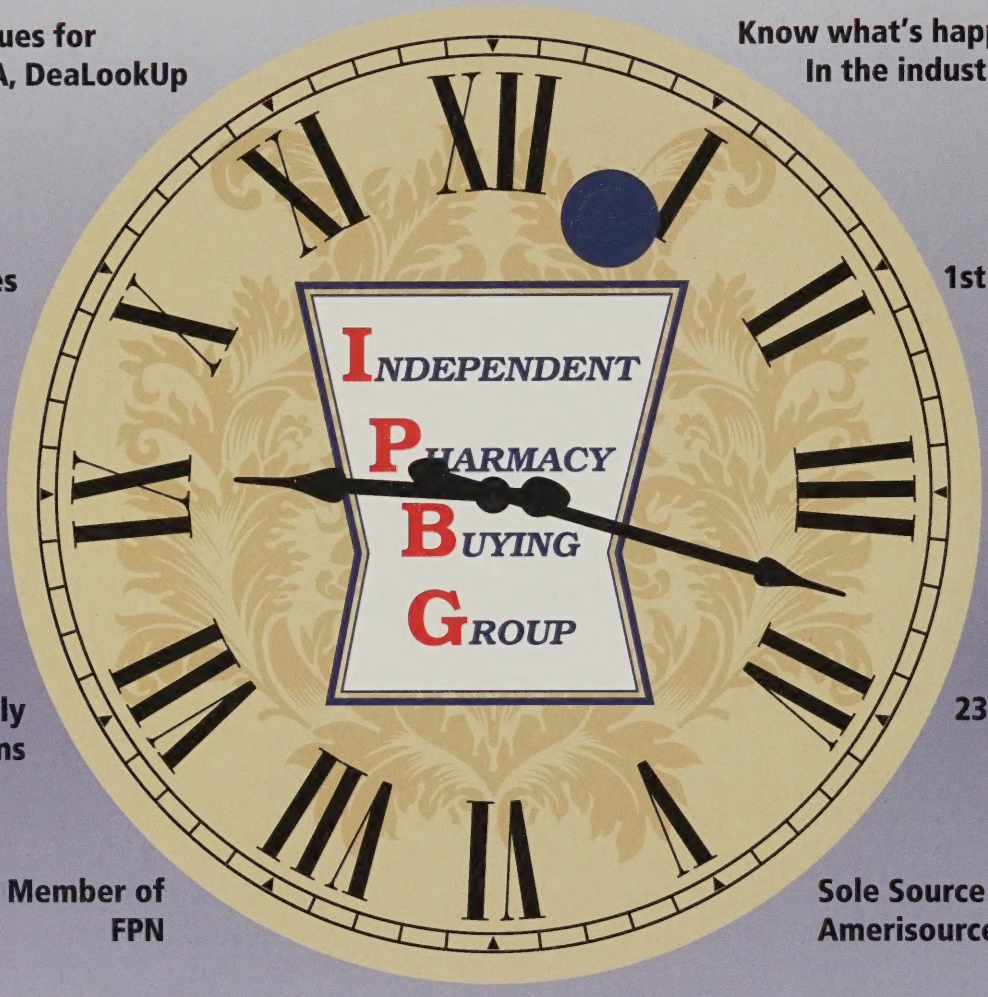

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Special thanks to Graphtech, Advertising Sales and Design

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President's Pad

With the new year comes many new opportunities for Maryland Pharmacy. The legislative session promises to be another exciting one with many bills that can affect the scope and practice of pharmacy. Thank you for your efforts so far with Legislative Day. I encourage you to be actively contacting your state delegates and senators regarding the importance of pharmacist care and the bills that affect you specifically.

We are working hard to update our strategic plan. Strategic planning is a large undertaking of time and effort, but it provides the association with much needed focus and major goals to work towards. Please provide your input at the open forums at the MPhA 2020 Midyear Meeting and when called upon. You are MPhA and we need your input.

The Midyear Meeting was full of great educational sessions and opportunities to connect. Remember to sign up and join us to meet your CE and professional development needs. We will see you there!

It is a new year for membership. If you haven't taken the time to renew, please do so now. We need your support as a member. If you are not a member, MPhA cannot add your voice to the hundreds of other pharmacist, student, and technician members to enact change and protect pharmacist rights. Remember, you are MPhA and we need you. Decide which level of membership suits you best – informed, engaged, or connected – and renew today!

Thank you for your participation and engagement in our Town Hall Discussion.

Richard DeBenedetto,
PharmD, MS, AAHIVP

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Member Mentions & News You Can Use

2nd Annual "Do You Believe in MAGIC" Was a Success!

The 2nd-Annual Maryland Pharmacists Association (MPhA) "Do You Believe in MAGIC" event was hosted by the University of Maryland Eastern Shore School of Pharmacy and Health Professions, located in Princess Anne, Maryland on Sunday, December 15th, 2019. Although 10 days shy of Christmas, attendees arrived at 8:30am and the event kicked off with a relaxing tai chi session, followed by several intriguing speakers. Attendees included students from all the Maryland pharmacy schools, students from Shenandoah University School of Pharmacy, and new practitioner pharmacists from the Eastern Shore of Maryland and from many areas across the Bay Bridge. Participants were afforded the opportunity to network with leaders in Maryland Pharmacy, some of the associations' past presidents, and current/past members of the Board of Trustees.

Happy 50th Anniversary to the Maryland Pharmacists Association Foundation!

The MPhA Foundation's mission is to invest in the future of pharmacy by supporting student pharmacists, recognizing practice innovation and advancements and enhancing philanthropy that supports leadership. The Foundation awards scholarships, supports workshops, holds fundraisers and gives awards. Every little bit goes toward this great organization. ●

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MPhA *Welcomes* OUR NEWEST MEMBERS

Welcome to MPhA, we are happy to have you! If you meet these new members, please welcome them to the MPhA pharmily. Be sure to invite them to join a committee or attend a networking event!

Engaged

Hanaa Ammar – Pocomoke
Anme Bass – Severna
Bridget Ngwa – Lutherville-Timonium

Connected

Innocent Egbunine - Baltimore

Informed

Mariam Chaudhri
Kathy Chavers – Laurel
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Students

Min Park – Baltimore
Benjamin Peckman – Princess Anne
Rachel Sit – Gaithersburg
Eric Tao – Baltimore
Dominik Twumasi– Gaithersburg
Deanna Zargar – Naperville

UPCOMING 2020 EVENTS

Mar 21 — **Maryland Pharmacy Night at APhA**

Mar 26 — **Board of Trustees Meeting**

Apr 16 — **CE Dinner**

Jun 19-21 — **138th MPhA Annual Convention**

For more information and additional activities, visit www.marylandpharmacist.org.

138th MPhA Annual Convention

June 19-21, 2020

Hyatt Regency Chesapeake Bay Golf Resort, Spa and Marina | Cambridge, MD

You're Invited to attend MPhA's 138th Annual Convention where pharmacists, pharmacy technicians, and student pharmacists from the surrounding regions convene to learn, network, and engage with colleagues and peers! We hope you will join us at the resort to enjoy ample opportunities to broaden your knowledge in the pharmacy profession.

HIGHLIGHTS INCLUDE:

- CEUs on the most current trends in the pharmacy profession
- Opportunities to network, connect, and re-connect with your peers
- Chances to gain new perspectives from our dynamic speakers
- Recognition of professional accomplishments
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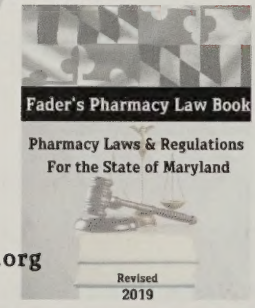

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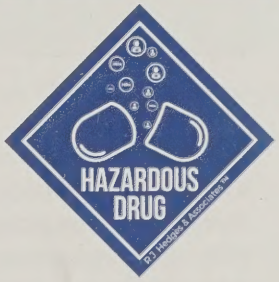

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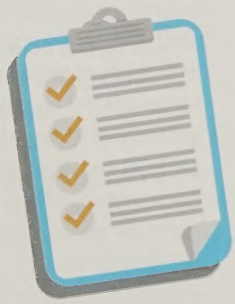

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Breathe Easier – Pediatric Asthma Management Refresher

Amy Kruger Howard, PharmD and Jill A. Morgan, PharmD, BCPS, BCPPS

Learning Objectives

After completing this activity, the pharmacist will be able to:

1. Recall the pathophysiology of asthma
2. Identify asthma-associated symptoms, the clinical presentation of an acute exacerbation, and triggers
3. Recognize and evaluate the mechanism of action for pharmacologic therapies and their place in pediatric asthma management
4. Given a clinical case for a pediatric patient with asthma,

a. Identify associated symptoms and assess the patient's control

b. Evaluate the appropriateness of pharmacologic therapies and their place in asthma management

c. Recommend a dose-equivalent therapy given a change in insurance coverage

After completing this activity, the pharmacy technician will be able to:

1. Recall the pathophysiology of asthma
2. Develop a plan to address irregular refill patterns for both controller and rescue medications

Keywords: Asthma, Inhaler, Pediatrics

Background

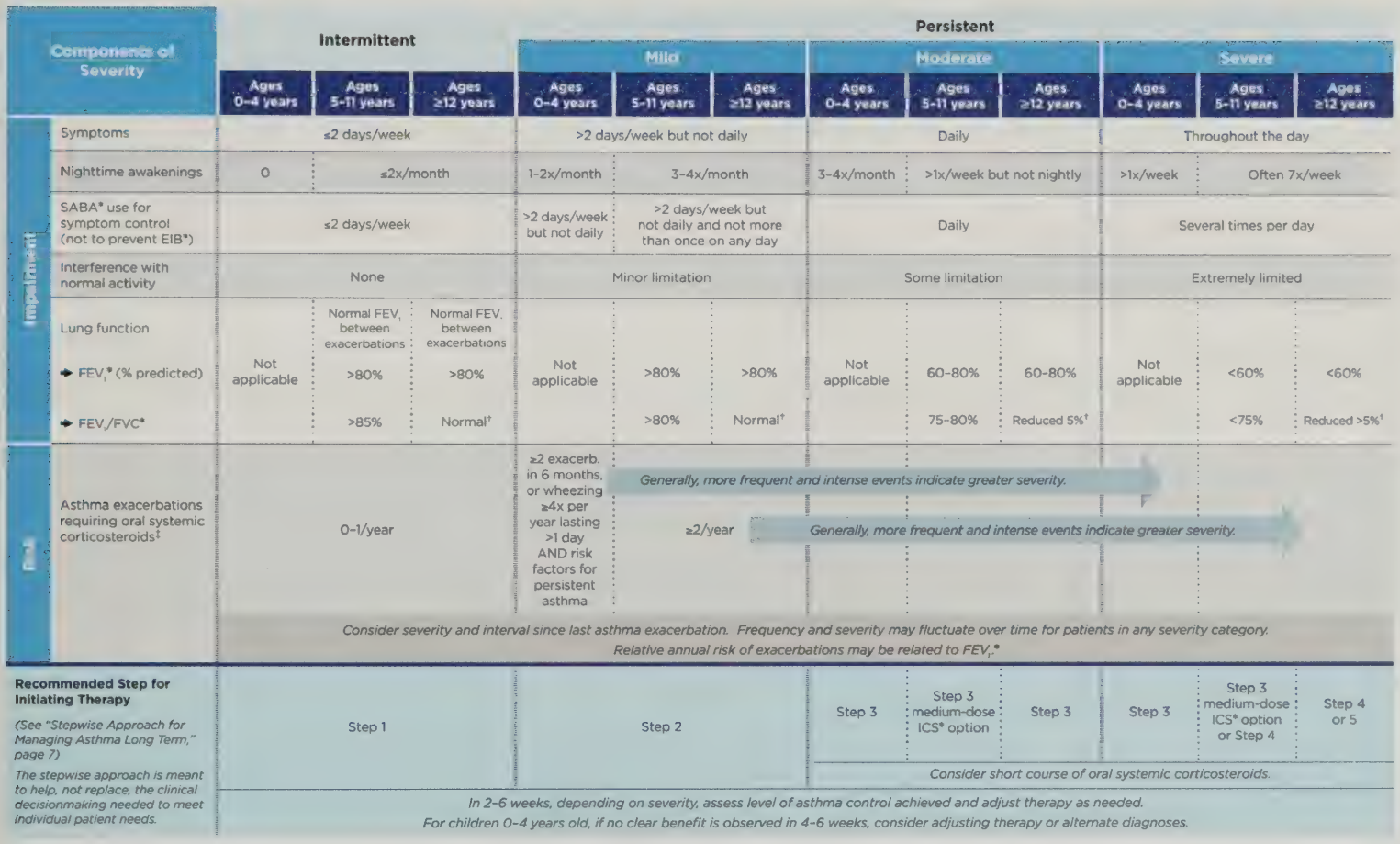
Asthma is an episodic, reversible chronic inflammatory process with increased airway hyper-responsiveness, airway obstruction, and smooth muscle constriction.[1] Endogenous cellular components including mast cells, neutrophils, eosinophils, macrophages, and T-lymphocytes trigger the inflammatory cascade in response to an allergen or irritant. In the setting of this inflammation, a child experiences airway hyperreactivity and obstruction, both of which create a cyclic feedback loop -- worsening smooth muscle constriction resulting in bronchospasm or bronchoconstriction. The spasm or constriction then manifests in symptoms typically seen in an acute asthma exacerbation: increased respiratory rate, wheeze, cough, and depending on the severity, possibly a decrease in oxygen saturation.

A child's initial asthma diagnosis often occurs during an acute exacerbation, when the symptomatic child and panicked caregiver arrive at an urgent care or emergency room. Several risk factors have been identified that increase a child's likelihood of experiencing acute exacerbations. Researchers have not yet identified particular genes associated with being exacerbation-prone; however, evidence exists of unique genetic markers that influence general asthma predisposition.[2] Atopy, the tendency to develop concomitant allergic diseases like eczema and allergic rhinitis, remains the strongest identifiable factor that a child will develop asthma.[3]

There are two leading resources for the evaluation and management of asthma: the 2007 National Heart, Lung, and Blood Institute (NHLBI) guidelines and the Global Initiative for Asthma (GINA) Report. The GINA Report is not a guideline but an evidence-based resource applying the latest scientific research to clinical treatment recommendations and is revised annually. Subtle differences exist between the two documents. Unfortunately, GINA recommendations only address children ages six years and older. NHLBI provides guidance for all ages but has not been updated in over a decade; though there are rumors an update is in the works.

As seen in the NHLBI guidelines, Figure 1 illustrates the key components of impairment and risk used to determine the severity of disease for a child at primary diagnosis. This chart should not be used to guide treatment management once a child has been prescribed an inhaler.

Figure 1. NHLBI Initial Visit: Classifying Asthma Severity and Initial Therapy [4]



*Abbreviations: EIB, exercise-induced bronchospasm; ICS, inhaled corticosteroid; LABA, inhaled long-acting beta2-agonist; LTRA, leukotriene receptor antagonist; SABA, inhaled short-acting beta2-agonist

Source: National Heart, Lung, and Blood Institute; National Institutes of Health; U.S. Department of Health and Human Services

Control Assessment

After receiving an initial asthma diagnosis, all subsequent asthma assessments should be based on symptom control. Several validated tools like the Asthma Control Questionnaire (ACQ) and the Asthma Control Test (ACT), which ask patients questions about recent symptoms, allow us to assess if they are well-controlled, not well-controlled, or very poorly controlled. Figure 2 shows the quick, four-question control assessment tool provided in the GINA report which was adapted from the ACT. The report also includes guidance on empathic interviewing, acknowledging the likelihood that many patients don't remember to take or know how to use their inhalers as prescribed.

nating all invading viral particles. Another enzyme necessary for influenza viral replication is viral polymerase, a protein containing three subunits.[6] One of the three subunits is the polymerase acidic (PA) protein. This protein is responsible for initiating the viral genome transcription process by cleaving nucleotides via endonuclease activity.[6] Traditional outpatient anti-influenza treatments target the NA protein.[7,8] These medications inhibit the function of viral NA, stopping the virus' ability to spread. However, newer anti-influenza medications inhibit the endonuclease activity of the viral PA protein, and therefore, inhibits the virus' ability to replicate.[9]

Figure 2. GINA Quick Control Assessment Questionnaire[5]

In the past 4 weeks, how many times has the patient had...

- Daytime symptoms 2+ times/week?
- Nighttime awakening?
- Rescue inhaler 2+ times/week?
- Any activity limitations?

None: Well controlled
Yes: 1 – 2 questions: Not Well-Controlled
Yes: 3 – 4 questions: Poorly Controlled

NHLBI guidelines for control assessment (Figure 3) factor in a child's age, frequency of symptoms, nighttime awakenings, need for the use of a rescue inhaler, activity limitation, and lung function (if applicable). Additionally, for a child who has experienced acute exacerbations in the past year, the frequency of prescribed oral corticosteroids is considered. Recurrent asthma exacerbations cause lung remodeling over time. Thus, children diagnosed at a young age who are not well controlled are more likely to suffer long-term consequences.

Figure 3. NHLBI Follow-up Visits: Assessing Asthma Control and Adjusting Therapy[4]

Components of Control		Well Controlled			Not Well Controlled			Very Poorly Controlled		
		Ages 0–4 years	Ages 5–11 years	Ages ≥12 years	Ages 0–4 years	Ages 5–11 years	Ages ≥12 years	Ages 0–4 years	Ages 5–11 years	Ages ≥12 years
Impairment	Symptoms	≤2 days/week	≤2 days/week but not more than once on each day	≤2 days/week	>2 days/week	>2 days/week or multiple times on ≤2 days/week	>2 days/week	Throughout the day		
	Nighttime awakenings	≤1x/month		≤2x/month	>1x/month	≥2x/month	1–3x/week	>1x/week	≥2x/week	≥4x/week
	Interference with normal activity	None			Some limitation			Extremely limited		
	SABA* use for symptom control (not to prevent EIB*)	≤2 days/week			>2 days/week			Several times per day		
	Lung function									
	➧ FEV_1* (% *predicted*) or peak flow (% *personal best*)	Not applicable	>80%	>80%	Not applicable	60–80%	60–80%	Not applicable	<60%	<60%
	➧ FEV_1/FVC*		>80%	Not applicable		75–80%	Not applicable		<75%	Not applicable
	Validated questionnaires†									
	➧ ATAQ*	Not applicable	Not applicable	0	Not applicable	Not applicable	1–2	Not applicable	Not applicable	3–4
	➧ ACQ*			≤0.75‡			≥1.5			Not applicable
	➧ ACT*			≥20			16–19.			≤15
Risk	Asthma exacerbations requiring oral systemic corticosteroids§	0–1/year			2–3/year	≥2/year		>3/year	≥2/year	
		Consider severity and interval since last asthma exacerbation.								
	Reduction in lung growth/Progressive loss of lung function	Not applicable	Evaluation requires long-term follow-up care.		Not applicable	Evaluation requires long-term follow-up care.		Not applicable	Evaluation requires long-term follow-up care.	
	Treatment-related adverse effects	*Medication side effects can vary in intensity from none to very troublesome and worrisome. The level of intensity does not correlate to specific levels of control but should be considered in the overall assessment of risk.*								
Recommended Action for Treatment *(See "Stepwise Approach for Managing Asthma Long Term," page 7)* *The stepwise approach is meant to help, not replace, the clinical decisionmaking needed to meet individual patient needs.*		*Maintain current step.* *Regular follow-up every 1–6 months.* *Consider step down if well controlled for at least 3 months.*			Step up 1 step	Step up at least 1 step	Step up 1 step	*Consider short course of oral systemic corticosteroids.* *Step up 1–2 steps.* *Reevaluate in 2 weeks to achieve control.*		
					Reevaluate in 2–6 weeks to achieve control. *For children 0–4 years, if no clear benefit observed in 4–6 weeks, consider adjusting therapy or alternative diagnoses.*					
					Before step up in treatment: Review adherence to medication, inhaler technique, and environmental control. If alternative treatment was used, discontinue and use preferred treatment for that step. For side effects, consider alternative treatment options.					

Source: National Heart, Lung, and Blood Institute; National Institutes of Health; U.S. Department of Health and Human Services

A child's asthma control should be classified based on their worst component of control, even in the case that most symptoms fall within a single classification. Once control is assessed, NHLBI uses a stepwise approach to escalate or de-escalate therapy as needed (Figure 4).

Asthma Action Plans

For the day-to-day management of asthma, each child should receive an asthma action plan. Most often these plans are initiated with a child's pediatrician, pulmonologist, or upon discharge from the hospital, post-acute exacerbation. Action plans use a simplistic traffic light analogy to help children and their parents recognize asthma warning signs and provide instructions on how to temporarily step-up care with the hope of managing acute exacerbations at home. While home management saves families from both direct and indirect healthcare costs, there are several symptoms that warrant being seen by a health care provider immediately. These 'alarm' symptoms (Figure 5) are likely to require emergent intervention.

Children who are at greater risk of exacerbation often have environmental triggers. For any asthmatic, regardless of whether

Figure 4. NHLBI Stepwise Approach for Managing Asthma Long Term[4]

At each step: Patient education, environmental control, and management of comorbidities

0–4 years of age

	Intermittent Asthma	Persistent Asthma: Daily Medication				
		Consult with asthma specialist if step 3 care or higher is required. Consider consultation at step 2.				
	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6
Preferred Treatment†	SABA* as needed	low-dose ICS*	medium-dose ICS*	medium-dose ICS* + either LABA* or montelukast	high-dose ICS* + either LABA* or montelukast	high-dose ICS* + either LABA* or montelukast + oral corticosteroids
Alternative Treatment†,‡		cromolyn or montelukast				

If clear benefit is not observed in 4–6 weeks, and medication technique and adherence are satisfactory, consider adjusting therapy or alternate diagnoses.

Quick-Relief Medication

- SABA* as needed for symptoms; intensity of treatment depends on severity of symptoms.
- With viral respiratory symptoms: SABA every 4–6 hours up to 24 hours (longer with physician consult). Consider short course of oral systemic corticosteroids if asthma exacerbation is severe or patient has history of severe exacerbations.
- Caution: Frequent use of SABA may indicate the need to step up treatment.

5–11 years of age

	Intermittent Asthma	Persistent Asthma: Daily Medication				
		Consult with asthma specialist if step 4 care or higher is required. Consider consultation at step 3.				
	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6
Preferred Treatment†	SABA* as needed	low-dose ICS*	low-dose ICS* + either LABA,* LTRA,* or theophylline[b]	medium-dose ICS* + LABA*	high-dose ICS* + LABA*	high-dose ICS* + LABA* + oral corticosteroids
Alternative Treatment†,‡		cromolyn, LTRA,* or theophylline[6]	OR medium-dose ICS	medium-dose ICS* + either LTRA* or theophylline[6]	high-dose ICS* + either LTRA* or theophylline[6]	high-dose ICS* + either LTRA* or theophylline[6] + oral corticosteroids
		Consider subcutaneous allergen immunotherapy for patients who have persistent, allergic asthma.**				

Quick-Relief Medication

- SABA* as needed for symptoms. The intensity of treatment depends on severity of symptoms: up to 3 treatments every 20 minutes as needed. Short course of oral systemic corticosteroids may be needed.
- Caution: Increasing use of SABA or use >2 days/week for symptom relief (not to prevent EIB*) generally indicates inadequate control and the need to step up treatment.

Components of Control		Well Controlled			Not Well Controlled			Very Poorly Controlled		
		Ages 0–4 years	Ages 5–11 years	Ages ≥12 years	Ages 0–4 years	Ages 5–11 years	Ages ≥12 years	Ages 0–4 years	Ages 5–11 years	Ages ≥12 years
Impairment	Symptoms	≤2 days/week	≤2 days/week but not more than once on each day	≤2 days/week	>2 days/week	>2 days/week or multiple times on ≤2 days/week	>2 days/week	Throughout the day		
	Nighttime awakenings	≤1x/month		≤2x/month	>1x/month	≥2x/month	1–3x/week	>1x/week	≥2x/week	≥4x/week
	Interference with normal activity	None			Some limitation			Extremely limited		
	SABA* use for symptom control (not to prevent EIB*)	≤2 days/week			>2 days/week			Several times per day		
	Lung function									
	➧ FEV,* (% *predicted*) or peak flow (% *personal best*)	Not applicable	>80%	>80%	Not applicable	60–80%	60–80%	Not applicable	<60%	<60%
	➧ FEV,/FVC*		>80%	Not applicable		75–80%	Not applicable		<75%	Not applicable
	Validated questionnaires†									
	➧ ATAQ*	Not applicable	Not applicable	0	Not applicable	Not applicable	1–2	Not applicable	Not applicable	3–4
	➧ ACQ*			≤0.75‡			≥1.5			Not applicable
	➧ ACT*			≥20			16–19			≤15
Risk	Asthma exacerbations requiring oral systemic corticosteroids[5]	0–1/year			2–3/year	≥2/year		>3/year	≥2/year	
		Consider severity and interval since last asthma exacerbation.								
	Reduction in lung growth/Progressive loss of lung function	Not applicable	Evaluation requires long-term follow-up care.		Not applicable	Evaluation requires long-term follow-up care.		Not applicable	Evaluation requires long-term follow-up care.	
	Treatment-related adverse effects	*Medication side effects can vary in intensity from none to very troublesome and worrisome. The level of intensity does not correlate to specific levels of control but should be considered in the overall assessment of risk.*								

Recommended Action for Treatment *(See "Stepwise Approach for Managing Asthma Long Term," page 7)* *The stepwise approach is meant to help, not replace, the clinical decisionmaking needed to meet individual patient needs.*	*Maintain current step. Regular follow-up every 1–6 months. Consider step down if well controlled for at least 3 months.*			Step up 1 step	Step up at least 1 step	Step up 1 step	*Consider short course of oral systemic corticosteroids. Step up 1–2 steps. Reevaluate in 2 weeks to achieve control.*			
				Reevaluate in 2–6 weeks to achieve control. For children 0–4 years, if no clear benefit observed in 4–6 weeks, consider adjusting therapy or alternative diagnoses.						
				Before step up in treatment: Review adherence to medication, inhaler technique, and environmental control. If alternative treatment was used, discontinue and use preferred treatment for that step. For side effects, consider alternative treatment options.						

Source: National Heart, Lung, and Blood Institute; National Institutes of Health; U.S. Department of Health and Human Services

they have atopy, environmental exposures, allergens, upper respiratory infections, and poor medication adherence can lead to an asthma flare. Common triggers include mold, cockroaches, pet dander, smoking, weather - fluctuations in both temperature and barometric pressure, dust, exercise or stress, seasonal allergies, and fragrances. Techniques for avoiding and responding to a child's triggers should be included as part of the individualized action plan and shared with family, friends, and school contacts.

Treatment

Inhalers are the mainstay of therapeutic management for asthma. The pharmacokinetics of inhaler aerosolized delivery systems require quality inhaler technique to ensure drug reaches its intended site of action.[7] As such, poor inhaler technique results in poor inhaler efficacy and contributes to poor asthma control.[8,9] Educating on proper technique is particularly important for children with asthma, as research shows they often lack proper technique.[10,11] Several studies examining symptom control identify that pediatric patients commonly miss one or more critical steps in the inhalation process.[12–14] In 2015, a prospective observational study of 296 children ages 8-16 found fewer than 10% were able to complete all the necessary steps to administer a metered-dose inhaler (MDI).15 Similarly, a 2019 study of 113 pediatric patients hospitalized for an asthma exacerbation found that 42% missed a crucial step when using their inhalers[10]

The NHLBI guidelines establish that repeated demonstration of proper technique and frequent reassessment are required for treatment efficacy. Recognizing the significant impact of improper inhaler technique on asthma control, they recommend technique assessment at every healthcare visit. Despite this recommendation, providers acknowledge they rarely perform these assessments during the compressed time allotted for a wellness checkup.[15]

Figure 5. Alarm symptoms, not suited for self-management[6]

SEEK MEDICAL ATTENTION

- Increasing use of rescue medication (albuterol) without symptom relief/response
- Chest tightness, tachypnea, tripoding, inability to speak in full sentences
- Nasal flaring and/or accessory muscle use (eg belly breathing)
- Audible expiratory wheeze
- Excessive coughing resulting in post-tussive emesis
- Perioral cyanosis

Inhaler Refresher

The following tables review pediatric-focused pearls regarding age-appropriate product selection, critical inhaler administration requirements for specific device delivery mechanisms, and ICS dose equivalence.

Table 1. Inhaler Device Overview – Rescue Therapy

Drug class	Brand Name	Generic Name	Delivery Device	FDA Approved Age
SABA	Proair RespiClick Proair HFA	Albuterol sulfate	Breath actuated MDI	4 years and older
	Proventil	Albuterol sulfate	MDI	4 years and older
	Ventolin	Albuterol sulfate	MDI	4 years and older
	Xopenex	Levalbuterol tartrate	MDI	4 years and older

Table 1b. Inhaler Device Overview – Controller Therapy				
Drug class	Brand Name	Generic Name	Delivery Device	FDA Approved Age
ICS	QVAR Redihaler	Beclomethasone dipropionate	Breath actuated	4 years and older
	Pulmicort Flexhaler	Budesonide	DPI	6 years and older
	Arnuity Ellipta	Fluticasone furoate	DPI	5 years and older
	Flovent Diskus Flovent HFA	Fluticasone propionate	DPI MDI	4 years and older
	Asmanex HFA Asmanex Twisthaler	Mometasone furoate	MDI DPI	12 years and older *Twisthaler 110mcg: 4 years and older
ICS/LABA	Symbicort	Budesonide/ Formoterol fumarate	MDI	12 years and older *80 mcg/4.5 mcg: 6 years and older
	Advair HFA Advair Diskus	Fluticasone/Salmeterol	MDI DPI	12 years and older *Diskus 100/50: 4 years and older
	Dulera	Mometasone/Formoterol fumarate	MDI	12 years and older *50 mcg/5 mcg: 5 years and older

Table 2. Patient Education for Proper Inhaler Technique[16]		
	Key Steps	Clinical Pearls
MDI + spacer		
Albuterol **Mometasone furoate (Asmanex HFA)** **Fluticasone propionate (Flovent HFA)** **Budesonide/formoterol (Symbicort)** **Mometasone/formoterol (Dulera HFA)**	1. Remover the inhaler cap 2. Prime the inhaler, if needed 3. Attach to the spacer and shake 4. Close lips around the mouthpiece and depress the canister 5. Breath in and out slowly 6 times 6. Remove the inhaler and re-cap	Recommend use of spacer +/- mask To prime, shake and actuate 4 puffs before first use or if last use was greater than 1 week
Breath Actuated		
Albuterol (RespiClick) **Beclomethasone dipropionate (QVAR Redihaler)**	1. Open the inhaler cap 2. Breath out, away from the mouthpiece 3. Close your lips around the mouthpiece and take a deep breath in 4. Hold your breath after the dose 5. Breath out slowly through your nose 6. Close the cap	No priming, no shaking (closure of cap primes next dose) Avoid covering vents located at the top of the inhaler

Table 2. Patient Education for Proper Inhaler Technique[16] (continued)		
	Key Steps	**Clinical Pearls**
DPI		
Budesonide (Pulmicort Flexhaler)	1. Hold the inhaler upright with the colored grip at the bottom 2. Hold the grip in one hand and twist off the cap 3. Load a dose by twisting the grip fully in one direction and back in the opposite direction (you should hear a click) 4. Breath out, away from the mouthpiece 5. Close your lips around the mouthpiece 6. Quick, deep breath in 7. Remove the mouth piece and re-cap the inhaler 8. Hold your breath after the dose 9. Breath out slowly through your nose	When starting a new inhaler, it must be primed one time To prime, twist and remove the cap, then holding the inhaler upright with one hand, use the other hand to twist the grip fully in one direction and back in the opposite direction
Fluticasone furoate (Arnuity Ellipta)	1. Hold inhaler flat 2. Open the cover to prepare the inhaler 3. Breath out, away from the mouthpiece 4. Close your lips around the mouthpiece 5. Quick, deep breath in 6. Hold your breath 7. Breath out slowly through your nose 8. Close the cover between doses	Opening the cap primes the dose Avoid covering the vents located on the front of the inhaler
Fluticasone propionate (Flovent Diskus) **Fluticasone/salmeterol (Advair Diskus)**	1. Hold inhaler flat at face level 2. Open the cover and pull the lever to prepare the inhaler 3. Breath out, away from the mouthpiece 4. Close your lips around the mouthpiece 5. Quick, deep breath in 6. Hold your breath after the dose 7. Breath out slowly through your nose 8. Close the cover between each dose	The analogy of holding a hamburger is helpful for better technique in younger children
Mometasone furoate (Asmanex Twisthaler)	1. Hold the inhaler upright with the colored base at the bottom 2. Hold the base in one hand and twist off the cap 3. The dose is now loaded 4. Breath out, away from the mouthpiece 5. Close your lips around the mouthpiece 6. Quick, deep breath in 7. Remove the mouth piece and re-cap the inhaler 8. Hold your breath after the dose 9. Breath out slowly through your nose	Avoid losing the cap, without it, no further doses can be administered

Table 3. GINA-defined ICS Dose Equivalence for Children up to Age 12[5]				
Inhaled Corticosteroids	Beclomethasone (QVAR Redihaler)	50-100	>100-200	>200; max 640
	40 mcg/inh	1 inh BID	2 inh BID	-
	80 mcg/inh	-	1 inh BID*	2-4 inh BID
	Budesonide (Pulmicort Flexhaler)	100-200	>200-400	>400; max 720
	90 mcg/inh	1 inh BID	2 inh BID	-
	180 mcg/inh	-	1 inh BID	2 inh BID
	Fluticasone furoate (Arnuity Ellipta)	50-100	n/a	200; max 200
	50 mcg/inh	1 inh daily ^	-	-
	100 mcg/inh	1 inh daily	-	2 inh daily
	Fluticasone furoate (Arnuity Ellipta)	50-100	n/a	200; max 200
	50 mcg/inh	1 inh daily ^	-	-
	100 mcg/inh	1 inh daily	-	2 inh daily
	Fluticasone propionate (Flovent HFA)	100-200	>200-500	>500; max 1760
	44 mcg/puff	1-2 puffs BID	-	-
	110 mcg/puff	-	1-2 puffs BID	-
	220 mcg/puff	-	1 puff BID	2-4 puffs BID
	Fluticasone propionate (Flovent Diskus)	100-200	>200-400	>400; max 2000
	50 mcg/inh	1-2 inh BID*	-	-
	100 mcg/inh	1 inh BID*	2 inh BID	≥2 inh BID
	250 mcg/inh	-	-	≥1 inh BID
	Mometasone (Asmanex HFA)	100	200-400	>400; max 800
	100 mcg/puff	-	2 puffs BID	-
	200 mcg/puff	-	1 puff BID	2 puffs BID
	Mometasone (Asmanex Twisthaler)	110	220-440	>440; max 880
	110 mcg/inh	1 inh daily*	1-2 inh BID	-
	220 mcg/inh	-	1-2 inh daily	2 inh BID

* max dose for ages 4-11 years ^ max dose for ages 5-11 years

Table 4. General Counseling Points for Inhaler Use and Care[16]

Important Education for Inhaler Use and Care
Increasing use of rescue medication (albuterol) without symptom
If using an inhaler without a spacer, a child should hold their breath for 5-10 seconds after inhaling the dose
If co-administering a rescue and controller inhaler, give the rescue inhaler first to allow deeper penetration of the controller dose
When required to take more than one puff/inhalation at a time, wait 60 seconds before giving the next dose
Always have a child rinse and spit or brush their teeth after using an inhaler containing a corticosteroid
Never rinse or soak an inhaler; if needed, simply wipe the mouth piece with a clean cloth

Pharmacodynamic and Pharmacokinetics Considerations

There has long been concern among prescribers about the impacts on child development with long term use of inhaled corticosteroids. Several studies have linked systemic absorption to mild growth velocity suppression secondary to hypothalamic-pituitary-adrenal (HPA) suppression and changes in bone density.[17] A randomized control trial of budesonide (200 mcg) showed a 1.34 cm reduction in growth over three years for children age 5 to 10.[18] In another study of ICS and suppression, 7.7% of participants experienced HPA suppression while taking high-dose fluticasone. Use of ICS at a BMI-adjusted daily dose of ≥22 mcg (fluticasone propionate HFA equivalent) was solely found to increase the risk for HPA suppression (OR 7.22, 95 % CI 1.23–42.26, p=0.028).[19]

Pharmacokinetic studies have also demonstrated that without use of a spacer, children will ingest anywhere from 40-90% of a dose as it deposits on their tongue or the back of their throat.[20] However, not all ICS are created equal – oral bioavailability varies significantly among the class. Mometasone furoate's oral bioavailability was initially thought to be <1%, but multi-dose trials suggest it may be as high as 11%. A comparative review of all ICS pharmacokinetics cites fluticasone propionate delivered via MDI at 1%, budesonide 11%, and beclomethasone dipropionate as the highest at 15%. Additionally, high lung bioavailability seen with high-dose use contributes to systemic effects.[17]

Given inhaled beclomethasone has the highest systemic absorption, Teva's discontinuation of its QVAR MDI in favor of the Redihaler breath-actuated formulation poses concerns for pediatric patients. In addition to the potential systemic effects, its incompatibility with use of a spacer increases the probability of oropharyngeal deposition of the corticosteroid. Patients using ICS-containing inhalers have a five-fold greater risk of developing oral candidiasis (thrush) due to topical drug deposition.[21]

As more studies evaluate the effects of chronic ICS therapy, debate continues about whether evidence supports shifting management preferences to combinations products - adding a second mechanism of action in place of increasing steroid dosing. A 2009 meta-analysis, in which more than a quarter of the trials included were conducted exclusively in pediatric populations, demonstrated that combination therapy could reduce exacerbations (RR = 0.73; 95% CI 0.67–0.79) compared with the ICS-only group. Interestingly, the analysis also showed no statistically significant difference between the LABA/ICS combination group and the ICS-only group for asthma-related death (RR = 2.96; 95% CI 0.50–17.57).[22] Important to note, combination ICS/LABA products no longer have the Black Box Warning for increased risk of asthma-related death which pertains to LABAs as monotherapy.

Taking into consideration the pharmacokinetics, including bioavailability and comparative efficacy, shifting preference to low-dose ICS + LABA over a medium-dose ICS alone for therapeutic management of Step 3 in children age 5-11 is warranted.

Adjunctive Devices

As the approval age for controller therapies expands to younger children, questions arise about the feasibility of training children as young as 4 years to correctly take the quick, deep breath needed for effective delivery. As illustrated in the case of QVAR Redihaler, one of the primary concerns with DPIs and breath-actuated inhalers is their incompatibility with use of a spacer.

Promoting the use of spacers with MDIs to improve technique has been a mainstay recommendation for pediatric asthmatics. Spacers allow children to breathe normally while effectively receiving the full dose. In addition, spacers mitigate concerns about the deposition of inhalation doses on the tongue, minimizing

Active Learning – Patient Case

Selena is a 5-year-old Latina who presents to Midtown Pediatrics. She recently relocated from Florida and is coming in to establish care. Selena was diagnosed with mild persistent asthma in December 2017. Mom notes ever since moving into their new apartment, Selena has been waking up in the middle of the night with a nagging cough. Last month she did go to the ED for an episode of wheezing when she had a cold. The ED gave her a refill of her albuterol inhaler. She takes fluticasone propionate HFA 44mcg 2 puffs twice a day. Per mom, she might miss a dose occasionally, but she is mostly on top of the medication schedule. Selena's maternal aunt and grandmother both have asthma.

1. **What additional information would you need to gather from Selena's mother before being able to properly assess the patient's asthma control?**
2. **Selena's mother tells you she received notification from her insurance that Arnuity Ellipta is now the preferred agent. After assessing that no step up in therapy is warranted, the NP wants to send over a new Rx for fluticasone furoate 50 mcg 1 inhalation daily. Is this dose an appropriate equivalent to her current controller therapy?**
3. **As a pharmacy technician, which of the following might grab your attention as something to be brought to the pharmacist's attention?**
   a. Mom drops off a prescription for a steroid taper course for Selena labeled PRN
   b. Selena's grandma is here requesting a refill of her albuterol, 30 days after the last refill
   c. Selena's ICS is on your 14-day pull list to be returned to stock after not having been picked up
   d. There hasn't been a refill on Selena's albuterol in the last 60 days

Answers on page 20

the potential for systemic absorption and oral thrush. And while many parents and pediatricians have shown preference for nebulizers in young children, use of a MDI with a spacer (+/- mask) has better clinical outcomes with the added benefit of portability.[23] A mask should be added to the spacer for children unable to close their lips tightly around the spacer mouthpiece to maintain the seal.

Summary

Most adverse effects are dose-dependent; therefore, the goal of ICS-based controller therapy should be to find the lowest effective dose. With insurance companies frequently requiring prior authorization for initiation of combination ICS/LABA inhalers, pharmacists and pharmacy technicians play a vital role ensuring patients receive the most appropriate and effective therapy. Likewise, discussing with parents or providers whether a child needs an accompanying spacer (+/- mask) will ensure better delivery of medication to its intended site of action. Counseling patients on all first-fill inhalers is key to building a foundation for adherence and control. It is likely no provider has physically demonstrated inhaler technique using teach-back. Given the frequency of community pharmacy visits, pharmacists are better positioned than most other providers to re-check and re-educate -- making us uniquely positioned to help a child achieve control of their asthma. ●

REFERENCES

1. National Asthma Education and Prevention. Guidelines for the diagnosis and management of asthma (EPR-3) - summary report. J Allergy Clin Immunol. 2007;120(5):S94-S138. doi:10.1016/j.jaci.2007.09.029
2. Park HW, Tantisira KG. Genetic signatures of asthma exacerbation. Allergy Asthma Immunol Res. 2017;9(3):191-199. doi:10.4168/aair.2017.9.3.191
3. Arbes SJ, Gergen PJ, Vaughn B, Zeldin DC. Asthma cases attributable to atopy: Results from the Third National Health and Nutrition Examination Survey. J Allergy Clin Immunol. 2007;120(5):1139-1145. doi:10.1016/j.jaci.2007.07.056
4. National Heart Lung and Blood Institute. Asthma Care Quick Reference: Diagnosing and Managing Asthma. Asthma Care Quick Ref. 2012:1-11.
5. Global Initiative for Asthma. Global strategy for asthma management and prevention. 2019.
6. Usmani OS, Barnes PJ. Asthma: Clinical Presentation and Management. In: Grippi MA, Elias JA, Fishman JA, et al., eds. Fishman's Pulmonary Diseases and Disorders, 5e. New York, NY: McGraw-Hill Education; 2015.
7. Skoner D. Pharmacokinetics, pharmacodynamics, and the delivery of pediatric bronchodilator therapy. J Allergy Clin Immunol. 2000;106(3). doi:10.1067/mai.2000.109422
8. Klijn SL, Hiligsmann M, Evers SMAA, Román-Rodríguez M, van der Molen T, van Boven JFM. Effectiveness and success factors of educational inhaler technique interventions in asthma & COPD patients: a systematic review. npj Prim Care Respir Med. 2017;27(24):1-10. doi:10.1038/s41533-017-0022-1
9. Price D, Bosnic-Anticevich S, Briggs A, et al. Inhaler competence in asthma: common errors, barriers to use and recommended solutions. Respir Med. 2013;107(1):37-46. doi:10.1016/J.RMED.2012.09.017
10. Samady W, Rodriguez V, Gupta R, Palac H, Karamanis M, Press V. Critical errors in inhaler technique among children hospitalized with asthma. J Hosp Med 2019;14(6):361-365. doi:10.12788/jhm.3195
11. Sleath B, Ayala GX, Gillette C, et al. Provider demonstration and assessment of child device technique during pediatric asthma visits. Pediatrics. 2011;127:642 doi:10.1542/peds.2010-1206
12. Barbara S, Kritikos V, Bosnic-Anticevich S. Inhaler technique: Does age matter? A systematic review. Eur Respir Rev. 2017;26(146).
13. Braido F, Chrystyn H, Baiardini I, et al. "Trying, but failing" — the role of inhaler technique and mode of delivery in respiratory medication adherence. J Allergy Clin Immunol Pract. 2016;4(5):823-832. doi:10.1016/j.jaip.2016.03.002

REFERENCES (continued)

14. Usmani OS, Lavorini F, Marshall J, et al. Critical inhaler errors in asthma and COPD: a systematic review of impact on health outcomes. Respir Res. 2018;19(1):10. doi:doi.org/10.1186/s12931-017-0710-y
15. Carpenter D, Lee C, Blalock SJ, et al. Using videos to teach children inhaler technique: a pilot randomized controlled trial. J Asthma. 2015;52(1):81-87. doi:10.3109/02770903.2014.944983
16. National Asthma Education and Prevention Program. Asthma Tipsheets.
17. Crim C, Pierre LN, Daley-Yates PT. A review of the pharmacology and pharmacokinetics of inhaled fluticasone propionate and mometasone furoate. Clin Ther. 2001;23(9):1339-1354. doi:10.1016/S0149-2918(01)80113-2
18. Pauwels RA, Pedersen S, Busse WW, et al. Early intervention with budesonide in mild persistent asthma: a randomised, double-blind trial. Lancet. 2003;361(9363):1071-1076. doi:10.1016/S0140-6736(03)12891-7
19. Cavkaytar O, Vuralli D, Arik Yilmaz E, et al. Evidence of hypothalamic-pituitary-adrenal axis suppression during moderate-to-high-dose inhaled corticosteroid use. Eur J Pediatr. 2015;174(11):1421-1431. doi:10.1007/s00431-015-2610-9
20. Ye Q, He X-O, D'Urzo A. A review on the safety and efficacy of inhaled corticosteroids in the management of asthma. Pulm Ther. 2017;3(1):1-18. doi:10.1007/s41030-017-0043-5
21. Soto-Martínez ME, Yock-Corrales A, Camacho-Badilla K, et al. The current prevalence of asthma, allergic rhinitis, and eczema related symptoms in school-aged children in Costa Rica. J Asthma. 2018;4:1532-4303.
22. Rodrigo GJ, Moral VP, Marcos LG, Castro-Rodriguez JA. Safety of regular use of long-acting beta agonists as monotherapy or added to inhaled corticosteroids in asthma - a systematic review. Pulm Pharmacol Ther. 2009;22(1):9-19. doi:10.1016/j.pupt.2008.10.008
23. Castro-Rodriguez JA, Rodrigo GJ. β-agonists through metered-dose inhaler with valved holding chamber versus nebulizer for acute exacerbation of wheezing or asthma in children under 5 years of age: A systematic review with meta-analysis. J Pediatr. 2004;145(2):172-177. doi:10.1016/j.jpeds.2004.04.007

ANSWERS

1. **Answer:** Because we would classify the control based on Selena's most severe component, the pharmacist should probe further about: how often is Selena using her rescue inhaler; in the past month, how often has she woken up with her cough; during her most recent trip to the emergency room, did she receive an oral steroid course, or has she had any other oral steroid courses this year; has her activity level changed lately, like avoiding outdoor play or falling behind her play group.
2. **Answer:** Yes, this is an equivalent dose. However, before changing to a dry-powder inhaler we should assess whether Selena is able to demonstrate appropriate breathing technique. The DPI will require her to recognize differences from her rescue inhaler. This formulation also means she will no longer be able to use the mask and spacer that make administration of her medication easier for her mom to help.
3. **Answer: (a)** No, although frequent need for oral steroid tapers suggests a child's asthma may be poorly controlled, some pediatricians are now opting to provide patients with an as-needed steroid course as part of their asthma action plan. After consulting with the pediatrician, a child can then initiate the course at home with the hope of avoiding an emergency room visit or hospitalization.

(b) Yes, since most albuterol MDIs have 120 actuations, filling within the month would indicate that Selena is using her rescue inhaler with increased frequency and her overall asthma control should be reassessed.

(c) Yes, since her ICS is her mainstay controller therapy, missing regular pick-ups could indicate poor adherence to her twice daily dosing or the need to reassess for proper inhaler technique.

(d) No, lack of filling a rescue inhaler is generally a positive sign. However, if the child has gone several months without a rescue inhaler refill and caregivers are consistently filling her controller therapy, you could touch base at pick-up to make sure the rescue inhaler still has ample doses remaining. A long absence of filling a rescue inhaler can be brought to the pharmacist's attention. In the setting of persistent control, the pharmacist could discuss with the provider the appropriateness of stepping down therapy.

CONTINUING EDUCATION QUIZ

Note: Instructions for obtaining your CE has changed. Please contact MPhA Headquarters if you have any questions.

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The authors have no financial disclosures to report.

This program is Knowledge Based — acquiring factual knowledge that is based on evidence as accepted in the literature by the health care professionals.

Directions for taking this issue's quiz:

To receive CE credit for this activity, participants must read the article in its entirety, complete an evaluation survey on the activity, and earn a grade of 70% or higher on a short exam.

This issue's quiz on **Breathe Easier – Pediatric Asthma Management Refresher** can be found online at:

https://bit.ly/2ut0vfu

(1) Enter your name and contact information.

(2) Take the quiz and click "Complete Quiz."

Editorial

Financial Forum

Why Do You Need A Will?

It may not sound enticing, but creating a will puts power in your hands.

This series, Financial Forum, is presented by PRISM Wealth Advisors, LLC and your State Pharmacy Association through Pharmacy Marketing Group, Inc., a company dedicated to providing quality products and services to the pharmacy community

According to the global analytics firm Gallup, only about 44% of Americans have created a will. This finding may not surprise you. After all, no one wants to be reminded of their mortality or dwell on what might happen upon their death, so writing a last will and testament is seldom prioritized on the to-do list of a Millennial or Gen Xer. What may surprise you, though, is the statistic cited by personal finance website The Balance: around 35% of Americans aged 65 and older lack wills.[1,2]

A will is an instrument of power.

By creating one, you gain control over the distribution of your assets. If you die without one, the state decides what becomes of your property, with no regard to your priorities. A will is a legal document by which an individual or a couple (known as "testator") identifies their wishes regarding the distribution of their assets after death. A will can typically be broken down into four parts:

Executors:

Most wills begin by naming an executor. Executors are responsible for carrying out the wishes outlined in a will. This involves assessing the value of the estate, gathering the assets, paying inheritance tax and other debts (if necessary), and distributing assets among beneficiaries. It is recommended that you name an alternate executor in case your first choice is unable to fulfill the obligation. Some families name multiple children as co-executors, with the intention of thwarting sibling discord, but this can introduce a logistical headache, as all the executors must act unanimously.[2,3]

Guardians:

A will allows you to designate a guardian for your minor children. The designated guardian you appoint must be able to assume the responsibility. For many people, this is the most important part of a will. If you die without naming a guardian, the courts will decide who takes care of your children.

Gifts:

This section enables you to identify people or organizations to whom you wish to give gifts of money or specific possessions, such as jewelry or a car. You can also specify conditional gifts, such as a sum of money to a young daughter, but only when she reaches a certain age.

Estate:

Your estate encompasses everything you own, including real property, financial investments, cash, and personal possessions. Once you have identified specific gifts you would like to distribute, you can apportion the rest of your estate in equal shares among your heirs, or you can split it into percentages. For example, you may decide to give 45% each to two children and the remaining 10% to your sibling.

A do-it-yourself will may be acceptable, but it may not be advisable.

The law does not require a will to be drawn up by a professional, so you could create your own will, with or without using a template. If you make a mistake, however, you will not be around to correct it. When you draft a will, consider enlisting the help of a legal, tax, or financial professional who could offer you additional insight, especially if you have a large estate or a complex family situation.

Remember, a will puts power in your hands.

You have worked hard to create a legacy for your loved ones. You deserve to decide how that legacy is sustained. ●

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CITATIONS

1 - https://news.gallup.com/poll/191651/majority-not.aspx [4/24/18]
2 - https://www.thebalance.com/wills-4073967 [4/24/18]
3 - https://www.nolo.com/legal-encyclopedia/naming-more-one-executor.html [12/3/18]

Legislative Priorities

MPhA Priorities

MPhA will continue to push for a few pharmacist scope of practice bills, which include payment for the pharmacists' services. If you would like to be engaged in MPhA's Advocacy Committee, please contact Advocacy Committee Chair, Lauren Haggerty at lchaggert@gmail.com. The committee also serves as a sounding board for legislators and other stakeholders on bills that may impact pharmacy.

1. SB440/HB TBD /Pharmacists - Aids for the Cessation of Tobacco Product Use

Modifies pharmacist scope of practice for pharmacists to prescribe FDA-approved tobacco cessation medications.

2. HB656/SB545 Pharmacists - Administration of Self-Administered Medications and Maintenance Injectable Medications

Modifies pharmacist scope of practice for pharmacists to be able to administer long-acting injectables (maintenance medications) after the initial dose has been administered by the prescriber.

3. HB530/SB 355 Health Occupations - Pharmacists - Administration of Vaccinations

Authorizes a pharmacist to administer certain vaccinations to an individual that is at least 9 years old but under the age of 18 without a prescription.

4. Pharmacy Reimbursements

There are a number of bills to be introduced that address the ongoing battle between pharmacies and pharmacy

benefit managers' reimbursement for medications and dispensing. MPhA is also taking an active role in addressing the Maryland Department of Health's Medicaid PBM Audit report, which a found a $72 million spread between what the state pays for pharmacies services and what pharmacies are being reimbursed.

Who Makes the Decisions?

The 2020 General Assembly had a major overhaul in the leadership of each chamber. After nearly 50 years, the House and Senate will not have a "Mike" at the helm.

Senate Leadership

President, Bill Ferguson (D-46)
President Pro Tem, Melony Griffith (D-25)
Majority Leader, Nancy J. King (D-39)
Minority Leader, J. B. Jennings (R-7)

House Leadership

Speaker of the House, Adrienne A. Jones (D-10)
Speaker Pro Tem, Sheree Sample-Hughes (D-37A)
Majority Leader, Eric G. Luedtke (D-14)
Minority Leader, Nicholaus R. Kipke (R-31B)

With those changes also come changes to committees of interest. While many members are returning, there are certainly new faces that need to be educated about the role of pharmacists in our communities. There are three committees of jurisdiction in the Maryland General Assembly that cover issues of interest to MPhA. The Committees are listed below. If you live or work in the districts listed, make sure Senators and Delegates know who you are. It is important that every member of the committee is connected to an MPhA member. We have a new Advocacy Action Center that has been mobilized for the legislative session. It will make it easier for you to provide feedback and connect with your elected leaders. Stay tuned for alerts from the Action Center. ●

MARYLAND GENERAL ASSEMBLY

Senate

Education, Health and Environmental Affairs Committee

This committee has jurisdiction over pharmacists scope of practice.

Chair, Paul G. Pinsky (D-22)
Vice Chair, Cheryl C. Kagan (D-17)
Members:
Jack Baily (R-29)
Mary Beth Carozza (R-38)
Artur Ellis (D-28)
Jason C. Gallion (R-35)
Katie Fry Hester (D-9)
Clarence K. Lam (D-12)
Obie Patterson (D-26)
Bryan W. Simonaire (R-31)
Mary Washington (D-43)

Finance Committee

This committee has jurisdiction over insurance, insurance coverage and Pharmacy Benefit Managers

Chair, Delores G. Kelley (D-10)
Vice Chair, Brian J. Feldman (D-15)
Malcom Augustine (D-47)
Pamela Beidle (D-32)
Joanne C. Benson (D-24)
Antonio Hayes (D-40)
Stephen S. Hershey, Jr (R-36)
J.B. Jennings (R-7)
Katherine Klausemeier (D-8)
Benjamin Kramer (D-19)
Edward R. Reilley (R-33)

House

Health and Government Operations

This committee has jurisdiction over pharmacists scope of practice and insurance issues.

Chair, Shane E. Pendergrass (D-13)
Vice Chair, Joseline A. Pena-Melnyk (D-21)
Heather Bagnall (D-33)
Erek L. Barron (D-24)
Harry Bhandari (D-8)
Alfred C. Carr, Jr (D-18)
Nick Charles (D-25)
Brian Chisholm (R-31B)
Bonnie Cullison (D-19)
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Steve Johnson (D-34A)
Ariana B. Kelly (D-16)
Ken Kerr (D-3B)
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Susan W. Krebs (R-5)
Robbyn Lewis (D-46)
Matthew Morgan (R-29A)
Teresa E. Reilly (R-35B)
Samuel I. Rosenberg (D-41)
Sid Saab (R-33)
Sheree Sample-Hughes (D-37A)
Kathy Szeliga (R-7)
Karen Lewis Young (D-3A)

The Maryland General Assembly website is mgaleg.maryland.gov.

Editorial

Pharmacy and the Law
Controlled Substances

By Don. R. McGuire Jr., R.Ph., J.D.

The opioid crisis has brought a lot of attention to the prescribing and dispensing of opioids. This attention has also extended to the prescribing and dispensing of all controlled substances. I recently attended a seminar which contained a number of sessions on opioids and controlled substances. One of these sessions suggested that every pharmacist should read the DEA's Pharmacist's Manual. That suggestion caused me to ask myself when was the last time I had read it. One human trait is that we tend to forget details over time and our memory becomes a little less sharp. There have been a number of times when I was sure what a contract provision said, only to go back, read the document, and find that what it stated was slightly different from my memory. This same phenomenon applies to the Pharmacist's Manual. The manual is about 80 pages, but it is much more readable than the actual statute and regulations.

The speaker at the seminar explained that many pharmacists feel their duty is to make sure that a controlled substance prescription isn't forged or altered. While that is true, the duty is much broader. For a controlled substance prescription to be valid, it must be issued for a legitimate medical purpose in the usual course of the prescriber's professional practice. The law does not require a pharmacist to dispense a questionable prescription. The DEA has provided some red flags that may indicate diversion. Those are discussed in 2018 decision and order. Corresponding Responsibility is a topic that requires its own forum so I won't delve more deeply into it now.

The Pharmacist's Manual contains information on a number of topics. Besides a basic introduction to the Schedules, there is a lot of practical information in the manual. There is a section on the transfer and disposal of controlled substances. This covers transfer to another pharmacy, the original manufacturer, or a reverse distributor. There are numerous reminders to use the triplicate DEA Form 222 to transfer Schedule II substances. Another reason to refresh our memories periodically is that requirements change and if we rely only on our memories, we may not be current. The DEA recently announced the phase out of the triplicate form over the next two years.

The DEA Form 222 is also mentioned in the section of the manual on ordering of controlled substances. Topics here include how to order the Form 222, who is authorized to sign the forms, and what to do if the forms are lost or stolen. The manual also contains useful information on what to do when controlled substances are stolen or lost. The DEA must be notified, in writing, within one business day of the discovery of the theft or loss. Completion of the DEA Form 106 in this situation can be made easier by using the biennial inventory and prescription records because you can use these records to determine how much product was stolen or lost. There is also an entire section of recordkeeping requirements. While many

pharmacies are using a perpetual inventory system today, that does not replace the required biennial inventories. Physical inventories are required for a new registrant (either opening a new pharmacy or taking over an existing one) and for products that are newly added to a schedule.

The manual also contains helpful information for the review and dispensing of controlled substance prescriptions. It provides what information is required to be on the prescription itself and the information required to be on the prescription label. Partial fill situations are addressed as is the dispensing of controlled substances without a prescription. The record of over the counter sales of controlled substances is required to be kept in a bound record book. These types of sales must be made by a pharmacists and cannot be delegated to a non-pharmacist. While the manual contains a lot of practical information, there are some uncommon provisions also. Sometimes these less common situations are problem-prone because we aren't as familiar with the situation. Suppose one of your patients has a valid prescription for a C-IV medication and requests that you send a refill to their vacation home in Bermuda. Can you send that refill to a foreign country? Not unless you are registered with the DEA as an exporter and have obtained the necessary permits or submitted the necessary declarations for export. The pharmacist might assume it is permissible to send the refill because there is a valid prescription on file. This is an example where a seemingly reasonable conclusion is incorrect.

The periodic review of the DEA's Pharmacist's Manual is a good risk management tool. During my years of practice, none of my employers recommended or required that I review it. My working knowledge of the DEA regulations was what I drew from my pharmacy law class and any updates that I may have read and retained. Given the scrutiny that is currently being given to the dispensing of controlled substances, an annual review of the Pharmacist's Manual is an excellent risk management tool to help the pharmacist and pharmacy avoid a potential problem brought on by foggy memory of the requirements. In addition, a review of your state statutes and regulations should also be done because your state may have more restrictive standards which you are required to follow.

This article discusses general principles of law and risk management. It is not intended as legal advice. Pharmacists should consult their own attorneys and insurance companies for specific advice. Pharmacists should be familiar with policies and procedures of their employers and insurance companies, and act accordingly.

© Don R. McGuire Jr., R.Ph., J.D., is General Counsel, Senior Vice President, Risk Management & Compliance at Pharmacists Mutual Insurance Company.

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Editorial

Pharmacy Time Capsule

By: Dennis B. Worthen, PhD, Cincinnati, OH

1994

- The average price for a generic prescription was $14.18 and brand name was $37.37. Payors for prescription were: 19.6% government programs, 30.5% private insurance, 49.4% out of pocket.
- Oklahoma Congressman and pharmacist Bill Brewster introduced the Pharmacy Compounding Preservation Act of 1994 to guarantee the ability of licensed pharmacists to conduct the practice of compounding subject to applicable State and Federal laws. No action was taken but attention was drawn to the need to protect the traditional duty to prepare medicines.

1969

- Initiation of the Drug Efficacy Study Implementation (DESI) by the National Research Council's Division of Medical Sciences, to evaluate the medical effectiveness of 3,000-4,000 drugs introduced between 1938 and 1962.

1944

- Gamma globulin used as a preventive for measles was made available to civilians for the first time through the Red Cross and health departments.
- Experiments were undertaken using whole communities in controlled large-scale experiments to determine whether tooth decay can be prevented by adding minute amounts of fluorine to the drinking water.

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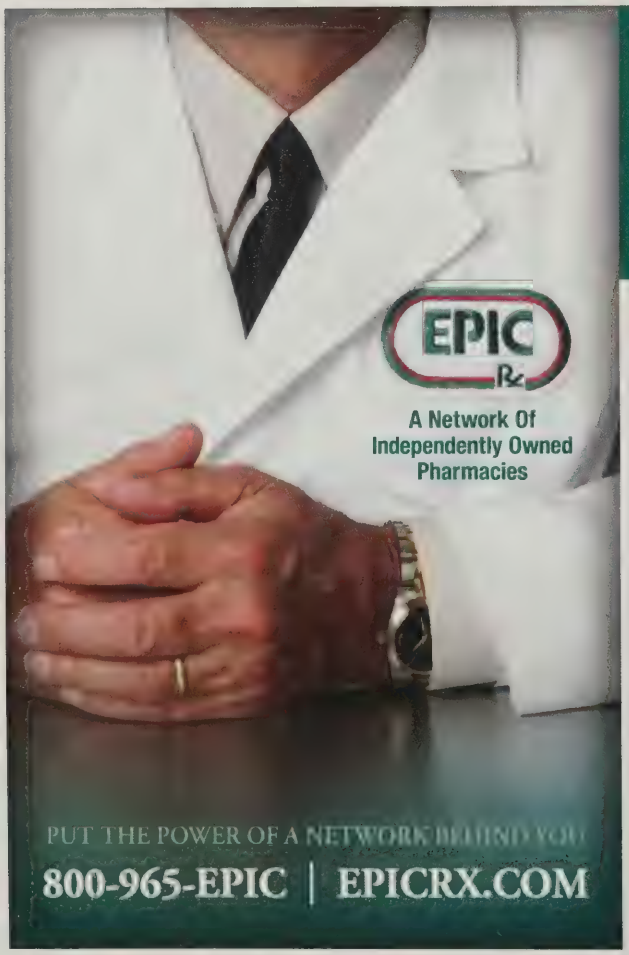

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Executive Director's Message

As MPhA uses our "2020 vision" for our strategic planning process, I thank you for renewing your membership and investing in what you value. As you engage with your uncommitted pharmacy colleagues, remind them that collectively we can make the difference in improving what does not work for the profession and enhancing what does.

How Can MPhA Be a Better Partner?

As we move into this new decade with conversations about "2020 vision," I take a moment to think back on my five years as your Executive Director. It is invigorating as an association professional to work with a group that has so much to be proud of as a profession and so much more to give to the community it serves. We have achieved great strides in enhancing pharmacists' scope of practice; increasing advocacy and outreach; diversifying our professional development and training; providing transparency in our operations; and raising our profile and brand recognition in Maryland and nationally. We've also diversified our revenue streams and taken some calculated risks in changing our membership structure and meeting venues. However, despite these successes, we remain challenged in bringing more of our pharmacy family into the MPhA-fold. Our 2020 vision must be laser focused on creating a value proposition that cannot be ignored by the community we serve.

The Board of Trustees, volunteers and staff work in so many ways to fulfill our mission for pharmacists in Maryland:

Strengthen the profession of pharmacy

Advocate for all Maryland pharmacists

Promote excellence in pharmacy practice

I remain optimistic about the continued work of MPhA. However, to make additional strides we must have to build the support and engagement from the broad community of Maryland pharmacists. I am a strong believer in the adage, "INVEST IN WHAT YOU VALUE" --- whether it is time or resources. The Board of Trustees modified the membership structure, so that we could truly see what pharmacists value in Maryland. I am heartened by the number of returning and new members who have chosen to join MPhA under the new membership structure. However, the percentage is small compared to the number of licensed pharmacists living and/or practicing in the state.

As MPhA uses our "2020 vision" for our strategic planning process, I thank you for renewing your membership and investing in what you value. As you engage with your uncommitted pharmacy colleagues, remind them that collectively we can make the difference in improving what does not work for the profession and enhancing what does. Sometimes that investment means "giving what you cannot keep (time and resources), to gain what you cannot lose (support and advocacy of your professional society)." While that quote was shared with me in a different context, I recognize that committing to an organization through membership or volunteer activity can be a sacrifice at times, but I also remind you that the professional benefits and connections are those that you cannot afford to lose.

I am thankful that we continue to have a diverse board and volunteers that represent a broad array of practice settings to provide the insight we need to address these challenges head on. We call on you to help us in this process.

As your professional association, we will continue to invest in you, because we know and appreciate your value.

Wishing you an AWESOME 2020, full of clear vision and purpose.

Thank you for your support.

Best,

Aliyah N. Horton, CAE
Executive Director

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Legislative Update
Key Pieces of Legislation

COVID-19 Update

MPhA News
MPhA Annual Convention Update

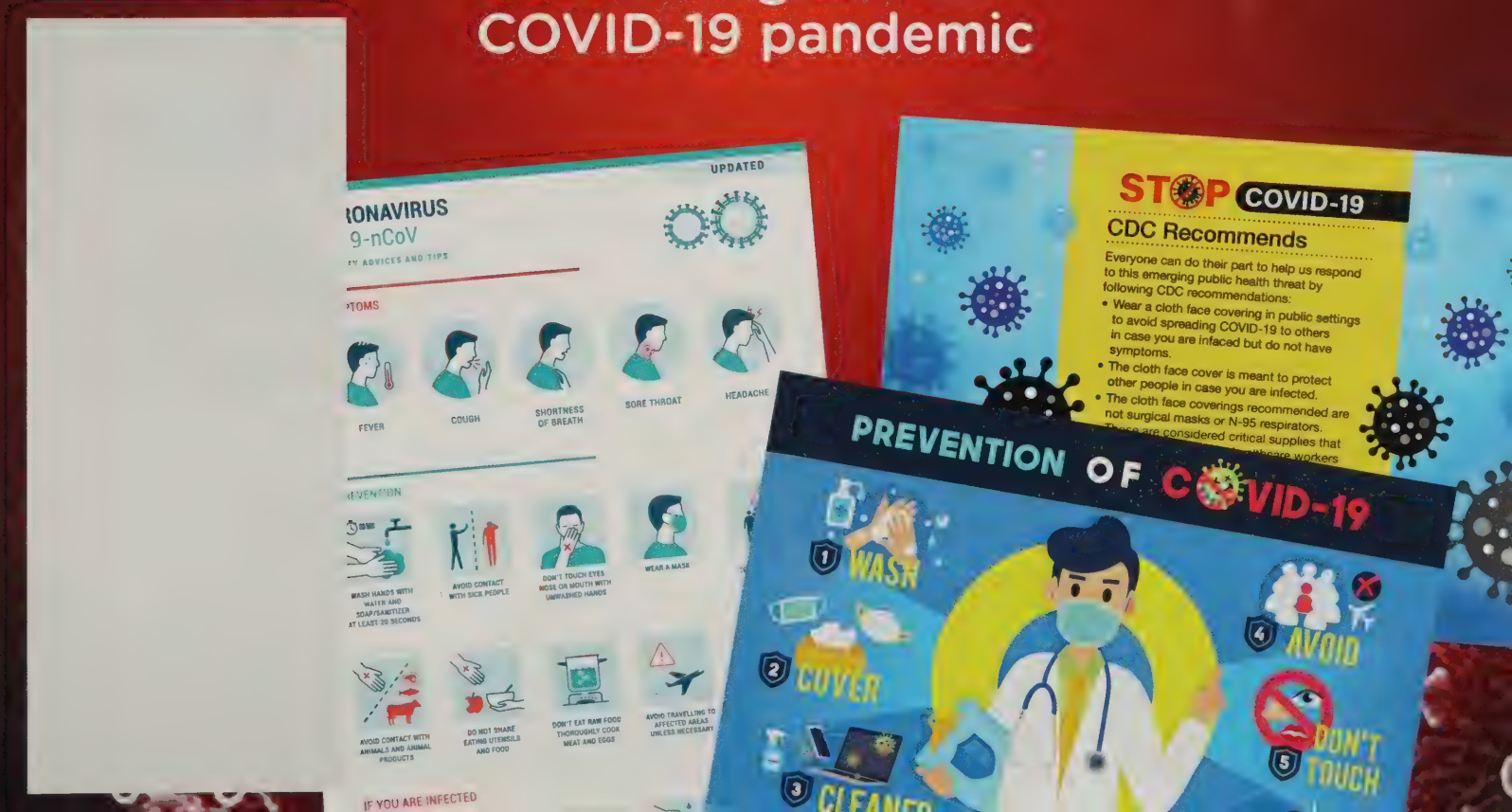
Continuing Education
Considering the Evidence to Assess Benzodiazepine Use

Maryland Pharmacist

SPRING 2020

We are here for you.

MPhA is your resource partner during the COVID-19 pandemic


UPDATED
STOP COVID-19
CDC Recommends
Everyone can do their part to help us respond to this emerging public health threat by following CDC recommendations:
• Wear a cloth face covering in public settings to avoid spreading COVID-19 to others in case you are infected but do not have symptoms.
• The cloth face cover is meant to protect other people in case you are infected.
• The cloth face coverings recommended are not surgical masks or N-95 respirators.
PREVENTION OF COVID-19
1 WASH
2 COVER
3 CLEAN
4 AVOID
5 DON'T TOUCH
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COUGH
SHORTNESS OF BREATH
SORE THROAT
HEADACHE
WEAR A MASK

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Policies & Procedures, along with support documents, to implement all requirements for USP <800> in Retail or LTC pharmacy. Includes Assessment of Risk, Hazard Communication Plan, Hazardous Drug Inventory, Hazardous Drug Designee, Hazardous Drug Training, Best Practices, Dispensing Final Dosage Forms. These will continue to be updated as the regulation changes. All files housed on Compliance Portal®.

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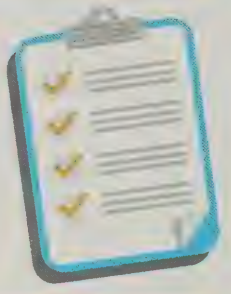
Includes generic drug name, NIOSH Table, drug form, and manufacturer's packaging designation for 100+ hazardous drugs. Review, sign, and implement. Includes 3 completed Hazardous Drug Inventory sheets to match the NIOSH tables. Will be customized, printed, and mailed to your pharmacy.



Pharmacy & Hazardous Drug Spill Kit:

Convenient bucket allows for easy storage, quick response, and effective disposal. Designed specifically for Retail, LTC and Non-Sterile pharmacies. Will meet USP <800>. OSHA and EPA requirements and can be used for any spill, including bodily fluids. Mailed directly to your pharmacy.

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MPhA is Here For You

MPhA continues to monitor information about COVID-19 and important updates as they become available. Valuable resources are listed on page 9.

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President's Pad

This has been an interesting few months for all of us. As all of you, I've been working hard in this era of quarantine to manage the coronvirus. This has been a difficult and often overwhelming time for all healthcare providers. It seems like years ago we were actively lobbying for changes within the state legislature. Unfortunately, our efforts were defeated not by the opposition, but by the ending of the legislative session due to COVID-19. The coronavirus has led to the unfortunate cancellation of our typical Annual Convention this year.

The novel coronavirus that can cause COVID-19 is filled with a lot of scary unknowns. This is a deadly and serious issue facing our world, and pharmacists are on the front lines every day facing this concerning problem. I commend all that you are doing to keep the drug supply moving, but more importantly, to care for your patients. Remember, this disease is not just frightening for you, but for your lay patients. Ensure that you provide the assistance and care that is needed for all your patients. Now is not the time to say, "no I can't help," it is instead the time to say "what can I assist you with," or "don't forget the ...." Patients still need to learn about new medications, be reminded how to appropriately take their older medications, and need recommendations for OTC products.

This is not me telling you to put yourself in harm's way. On the contrary, now is the time to be even more vigilant with sanitary processes and appropriate usage of PPE. As owners, managers, and staff pharmacists, you are well placed to determine the best and perhaps unique solutions to protect yourselves, your staff, and your patients. Make sure that you share successes with your peers and MPhA regarding what methods you devise to keep people safe.

We are starting to see around the country some slowing of infections and deaths, relaxation of quarantines, and signs of change in this disease progression. Do not become complacent! Ensure you remember that the methods we are using to protect ourselves and patients are important safety measures, that will protect us during this extended outbreak. We are in this for the long haul. This is not something popular to express, but I believe that most of us understand that there will be significant numbers of infections and deaths that will still occur due to this disease. Estimates of 50-70% of the population getting infected are not likely to significantly change based on the steps that have been taken until we have effective treatments or vaccines. This disease started from one infected person, it can return with just one infected individual.

Yet as I think of us as pharmacists, as MPhA, we are strong. We are resourceful. We are relentless and enduring. We can handle this. We can handle our responsibility for our patients and the community. I've turned to listening to much more music during this time and I am challenging you to the encouraging words of Harry Chapin.

> Oh if a man tried
> To take his time on Earth
> And prove before he died
> What one man's life could be worth
> I wonder what would happen
> to this world

Stay safe,

Richard DeBenedetto,
PharmD, MS, AAHIVP

Member Mentions & News You Can Use

In Memoriam

It is with sadness we share the news of the recent passing of two MPhA Past Presidents: **James (Jim) P. Tristani**, Past President, 1995, and **Paul Freiman**, Past President, 1974. Paul was the recipient of the Bowl of Hygeia Award in 1979 and the Seidman Distinguished Achievement Award in 1984.

Congratulations to Kristen Fink

Congratulations to MPhA Past President Kristen Fink who was recently appointed as the newest At-Large Member of the Maryland Board of Pharmacy!

MPhA Welcomes OUR NEWEST MEMBERS

Welcome to MPhA, we are happy to have you! If you meet these new members, please welcome them to the MPhA pharmily. Be sure to invite them to join a committee or attend a networking event!

Students

Meskerem Abebe – Glenarden
Nadia Adjin-Tettey – Monrovia
Meredith Beavin – Reisterstown
Courtney Cameron – Annapolis
Amy Chen – Baltimore
Gina Chung – Potomac
Brittany Cranston – Baltimore
John De Leon – Rockville
Gabriela Dominguez – Baltimore
Brittany Grey – Baltimore
Melat Hailemariam – Hyattsville
Brittany Homick – Olney
Elise Lee – Baltimore
Edima McHertz – Laurel
Newtin Ndingwan – Randallstown
Elizabeth Sotubo – Baltimore
Harmanpreet Verma – Frederick
Yunming Xu – Baltimore
Roland Wong – Baltimore

Pharmacy Technicians

Simona Williams – Rockville

Engaged

Carol Broadnax – Silver Spring
Dana Couch – Ellicott City
Alicia Dowel – Abingdon

Informed

Lincy Abraham – Arlington
Marcella Baloga – Baltimore
Susan Braun – Bowie
Eliza Chapelle – Ellicott City
She-Chia Chen – Silver Spring
Edward Cho
Shawn Coffeen – Cromstock
Alexander Cruz – Baltimore
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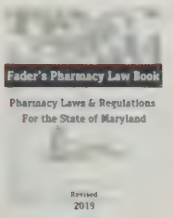

2019 Recipients of the "Bowl of Hygeia" Award

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Alabama

Catherine Worhatch Kowalski
Alaska

Mark Boesen
Arizona

Max Caldwell
Arkansas

Thomas Branigan
Colorado

Philip Hritcko
Connecticut

Madeline Moses
Delaware

Carmen Aceves Gordon
Florida

Ira Katz
Georgia

Mike Minesinger
Illinois

Herb Halley
Indiana

Marilyn Osterhaus
Iowa

Vicki Schmidt
Kansas

Catherine Hanna
Kentucky

Kim Dupuy Wixson
Louisiana

Frank McGrady
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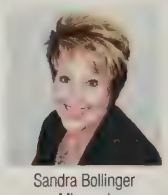
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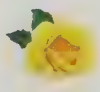

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MPhA WEEK

June 20–26, 2020

The health and safety of our members and friends is our first priority, and as such, the MPhA in-person Annual Convention has been cancelled.

We will be holding an **Annual Business Meeting on June 20** to give the *MPhA Annual Report*, hold the *House of Delegates* and host the *MPhA Foundation Annual Business Meeting*.

Save the date and stay tuned for more details.

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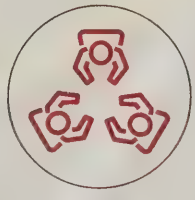

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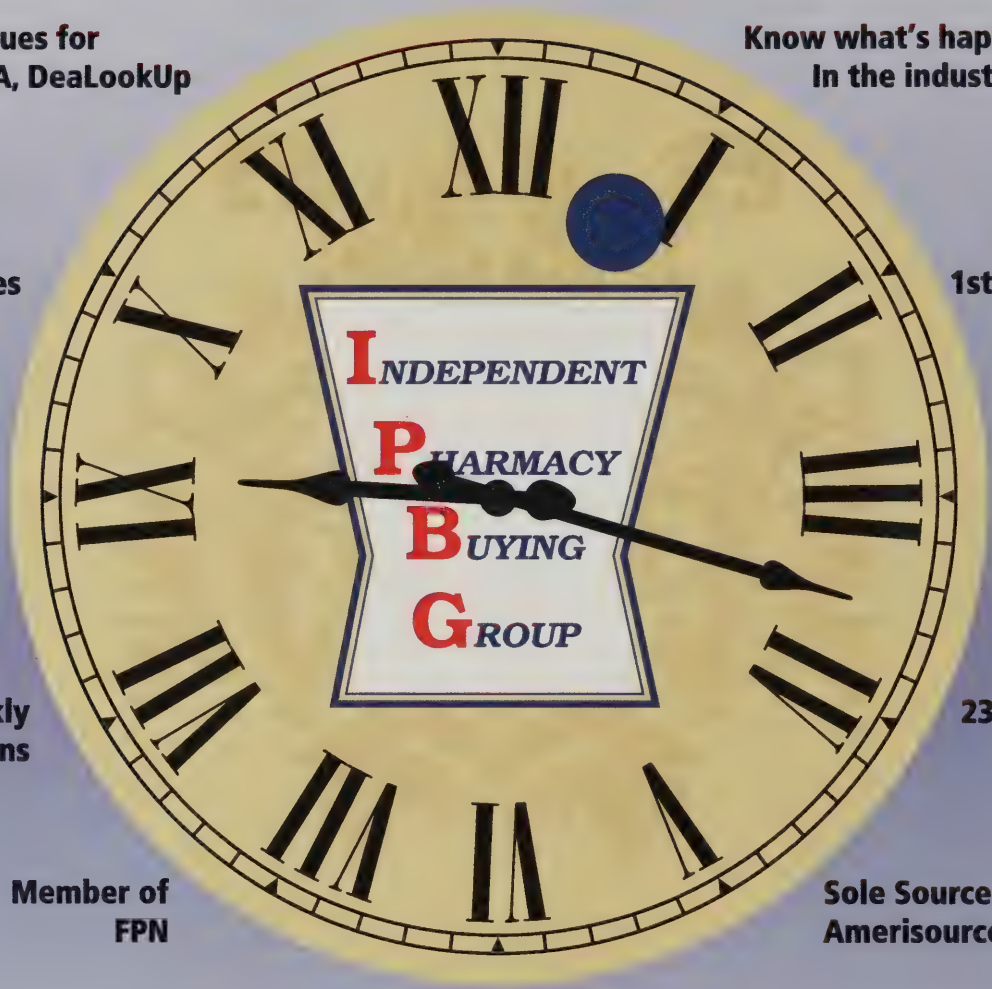

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MPhA

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The COVID-19 virus continues to spread in Maryland, and with that comes emergency declarations and new guidance from state and national regulatory bodies. We continue to monitor information about the virus and important updates as they become available. Please find important policy, guidance and resources to protect yourself and the community here and as always, on our website.

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MPhA
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On behalf of MPhA, thank you for attending the 2020 Mid-Year Meeting, Sunday, February 16 in Hyattsville, MD! Your presence made this event a **great success!**

We would also like to thank our sponsors and exhibitors for their support of this meeting. Please make sure to connect with these companies in the future.

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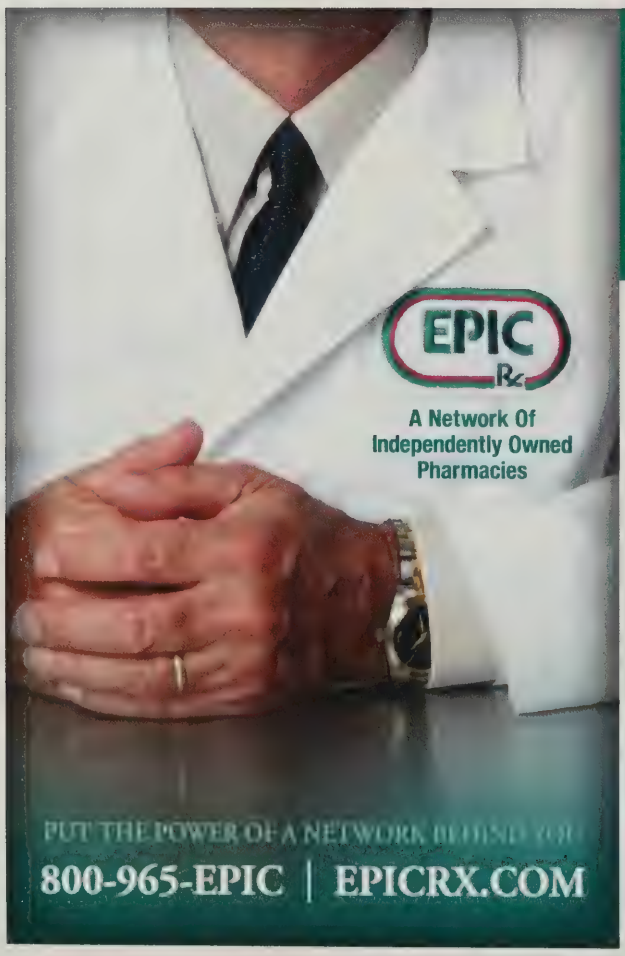

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Continuing Ed

Considering the Evidence to Assess Benzodiazepine Use

Learning Objectives

By the conclusion of the reading, the pharmacist should be able to do the following based on a patient case:

1. List the legal requirements related to prescribing and dispensing benzodiazepines
2. Identify potentially inappropriate use as it relates to benzodiazepine prescriptions, a patient's age, medical conditions and/or current medication list
3. Describe an appropriate deprescribing strategy based on patient and setting specific factors

By the conclusion of the reading, the pharmacy technician should be able to do the following based on a patient case:

1. Describe how benzodiazepine prescription requirements differ from non-controlled prescriptions
2. State at least two reasons a patient should be referred to a pharmacist for additional counseling about benzodiazepine use

Keywords

Benzodiazepine, Deprescribing, Evidence-Based Medicine

Past and Present Use

Benzodiazepines first entered the US market in 1960 with the introduction of chlordiazepoxide. Over time, benzodiazepines became widely celebrated for their rapid onset and anticonvulsant, sedative, and anxiolytic properties.[1-3] They were deemed superior to barbiturates given the reduced risk of respiratory depression and dependence. It was not until the 1980s when concerns about the risks of benzodiazepine abuse and dependence became more widespread. There were notable concerns about use in older adults where increased risk of adverse events outweighed any potential benefits.[3] In 1987 the first selective serotonin reuptake inhibitors (SSRI), fluoxetine, gained FDA approval. The SSRIs were followed closely by venlafaxine, the first serotonin-norepinephrine reuptake inhibitor (SNRI).[4] Guidelines often prefer alternative medications to benzodiazepines where pharmacologic therapy is warranted[1] however, inappropriate benzodiazepine use has persisted despite guideline updates.

In August 2016, the FDA issued a black box warning for concomitant use of opioids and benzodiazepines due to increased risk of central nervous system (CNS) depression, including profound sedation, respiratory depression, coma, and death.[5] These medications may be coprescribed in cases where patients require both pain and mental health treatment, but this is not ideal. According to the National Institute on Drug Abuse (NIDA), of those who died of an opioid overdose in 2015, about 23% also tested positive for benzodiazepines. As of March 2018, NIDA estimated that more than 30% of opioid overdoses also involve benzodiazepines.[6] These findings coupled with improved understanding about benzodiazepine risks has resulted in increased scrutiny about whether use is warranted, or alternative treatment is more appropriate. Given frequent interaction with patients and prescribers, pharmacists and pharmacy technicians play important roles as educators about safe and appropriate use.

Legal Considerations

Pharmacists and pharmacy technicians must consider legal issues surrounding benzodiazepine use in order to identify potential misuse. In the state of Maryland, benzodiazepines are classified as schedule IV (four) controlled dangerous substances (CDS) thus prescription requirements differ slightly from non-controlled substances. For example, in addition to usual prescription requirements, controlled prescriptions require documentation of the patient address and prescriber registration number, or Drug Enforcement Administration (DEA) number on the prescription.[7] The law does not restrict the addition of this information by the pharmacy team but it is best practice to comply with local site requirements to ensure compliance with both legal and site-specific standards. Often, site-specific policies allow the pharmacy team to confirm the patient address at the time of drop-off for inclusion on the prescription. However, professional judgment is required to determine whether a new prescription is needed if a patient provides a prescription with a missing DEA number. Of note instead of a usual DEA number, exempted individual practitioners may include the institution registration number followed by an internal code assigned to the individual practitioner.[8] Schedule

III-V controlled prescriptions can only be transferred once and only refilled up to five times within six months from the original prescription date. Refills are not valid after six months have passed from the original prescription date. This differs from schedule II substances for which neither transfers nor refills are allowed.[7-8] Maryland law mirrors Title 21 of the Code of Federal Regulations for controlled prescription guidance.

Benzodiazepine and other controlled prescriptions are tracked using the state prescription drug monitoring program (PDMP). In Maryland, the PDMP is part of the Chesapeake Regional Information System for our Patients (CRISP).[9] Among pharmacy staff in Maryland, the terms "PDMP" and "CRISP" are often used interchangeably to refer to prescription drug monitoring. Housing controlled prescription history within a shared electronic database helps users identify individual CDS use across prescribers and pharmacies which may alert the user to inappropriate or fraudulent use. Most states have access to some version of a PDMP but regulations vary by state. For example, Maryland participates in interstate data sharing with all border states in addition to Arkansas, Connecticut, Kentucky, Maine, Minnesota, New Jersey, New York, North Carolina, and Washington.[9] In Maryland, all licensed pharmacists and practitioners authorized to prescribe CDS are required to be registered with and use the PDMP.[10] Pharmacists are required to review PDMP data whenever there is reason to believe that a patient is seeking the drug for any purpose other than the treatment of an existing medical condition. If any concern exists about the legitimacy of a prescription, the pharmacist should attempt to contact the prescriber for clarification. Although it is not mandated by law to report suspicious PDMP activity, users should contact the Office of Controlled Substances Administration (OCSA), the Board of Physicians, DEA, or local law enforcement to report prescribers who are suspected of abusing their prescriptive authority.[11] Known or suspected drug diversion among pharmacy staff must be reported to the Maryland Board of Pharmacy. See Table 1 for a list of common "red flag" indicators of CDS abuse during prescribing and dispensing.[12]

Pharmacologic Properties

Benzodiazepines act at the gamma aminobutyric acid (GABA) receptor in the brain by agonizing, or stimulating, their downstream effects. Upon binding at the GABA receptor, there is an influx of negatively charged chloride ions which reduces the likelihood to stimulate an action potential, resulting in reduced receptor activity. Stimulating the GABA receptor results in both the therapeutic

Table 1: Potential red flag indicators for controlled substance abuse related to prescribing and dispensing CDS. Adapted from the National Association of Boards of Pharmacy (NABP)[12]

Prescription Presentation
Patient presents a prescription that another pharmacy refused to fill
Handwritten prescription looks altered (e.g., quantity changed)
Prescriber DEA registration or state license is not currently active
Prescriber is prescribing outside of scope of practice as defined in the law
Individual Behavior
Patient presents a CDS prescription for someone else (except between caregivers and patients)
Travels in groups with the same or similar prescriptions from the same prescriber
Makes implied or direct threats
Shows signs or symptoms of drug abuse (e.g. needle tracks, altered mental status, sedated, smell alcohol on breath)
Presents multiple prescriptions to be filled but only requests the CDS at this time
History of being untruthful, particularly when filling CDS
Indicates that drugs will be shared or sold
Prefers to pay with cash even though he has insurance
Medication History
Large quantities prescribed or multiple prescriptions for CDS, without clinical justification
Therapeutic duplication present (e.g., both long and short acting agents where not clinically necessary)
Fills at multiple pharmacies, particularly in various states
Indication that patient is "stockpiling" medications at home (history of frequent fills prior to running out based on day supply)

anxiolytic effects as well as adverse effects including drowsiness, confusion, dizziness, sedation, and impaired coordination.[13] Chronic benzodiazepine use can result in drug tolerance which means that increasingly higher doses are required to achieve the same therapeutic effect. It is suspected that the degree of tolerance is enhanced among shorter acting agents and may occur within one or more weeks of use, although the mechanism of tolerance is unclear. Dependence may develop as characterized by tolerance, dose escalation, and/or withdrawal symptoms as a result of missed doses.[2] Withdrawal is most likely upon abrupt discontinuation of high doses used for extended periods of time, although withdrawal may still occur under other circumstances. Withdrawal duration may depend on a variety of factors including the pharmacokinetic profile of the drug, patient metabolic factors, and the dose and duration of use, among others. Signs and symptoms commonly include varying degrees of gastrointestinal side effects, irritability, sweating, insomnia, and/or anxiety. More serious signs include seizures, which is not as common, and more likely upon abrupt discontinuation of high doses used for extended periods of time.[2, 13-14]

Table 2 summarizes some key pharmacokinetic differences between more commonly prescribed agents. There are long acting and shorter acting agents with variable onsets of action. Given differences in metabolism between agents, some have active metabolites that continue to exert similar effects as the parent compound. Depending on the extent of hepatic metabolism and renal excretion, patients with hepatic or renal dysfunction may experience prolonged effects from the drug, particularly when there are active metabolites. The structures of the agents also differ which explains why lipophilic agents tend to have quicker time to onset and longer durations of action as they cross the blood brain barrier and readily distribute into fat tissue.[13] When determining which benzodiazepine is most appropriate under various clinical circumstances, the guidelines select agents with favorable pharmacokinetic properties and supported by experimental data. To determine appropriate use, pharmacists should consider how agents are cleared in various patient populations including elderly adults or those with renal or hepatic impairment.

Evidence Based Benzodiazepine Use

Two clinical treatment areas for which benzodiazepines are recommended first line include alcohol withdrawal syndrome and status epilepticus, an acute seizure disorder. When alcohol is withdrawn after chronic use, benzodiazepines can be used in its place to stimulate the GABA receptor to prevent severe seizures or delirium tremens. Patients are commonly treated inpatient but depending on symptom severity and concomitant conditions, outpatient management may be considered with close monitoring. Long-acting options like diazepam are recommended over short-acting alternatives, except in the setting of impaired metabolism (liver impairment) or excretion (renal impairment).[17] Patients with a remote history of alcohol dependence would likely benefit from benzodiazepine deprescribing given increased risks of abuse and dependence[1] however it is important not to deprescribe agents used to mitigate acute alcohol withdrawal. For status epilepticus, the American Epilepsy Society Guidelines recommend using intramuscular midazolam, intravenous lorazepam, or intravenous diazepam as first line treatment options in adults and children. In the outpatient

Table 2: Pharmacokinetic benzodiazepine differences[13, 15-16]

Benzodiazepine	Relative Oral Potency (mg)*	Oral Onset of Action	Half Life (hrs)	Metabolism
Long Acting (Average T1/2: 40-250 hrs)				
Chlordiazepoxide (Librium)	10	Intermediate	24-48	Hepatic (active)
Diazepam (Valium)	5	Rapid	20-80	CYPs 2C19 & 3A4 (active)
Intermediate Acting (Average T1/2: 12-40 hrs)				
Alprazolam (Xanax)	0.5	Intermediate	12-15	CYP3A4 (active)
Clonazepam (Klonopin)	0.25-0.5	Intermediate	18-50	CYP3A4 (active)
Lorazepam (Ativan)	1	Intermediate	10-20	Hepatic (inactive)
Oxazepam (Serax)	15-30	Slow	5-15	Hepatic (inactive)
Temazepam (Restoril)	30	Slow	10-20	Hepatic (inactive)
Short Acting (Median T1/2 1-12 hrs)				
Triazolam (Halcion)	0.5	Intermediate	1.6-5.5	Hepatic (inactive)
*Relative oral potency is the amount of medication (in mg) that is an estimated equivalent to 1 mg of lorazepam.				

setting where these agents are not available, rectal diazepam is commonly prescribed.[18] Sometimes caregivers who pick up the medication for a child may require more than one package to be kept at both home and school. It is vital that a pharmacist "dials" the diazepam dose prior to dispensing. Additionally, the designated caregiver requires education about its use, particularly upon first fill. Depending on the seizure type and frequency, patients are commonly prescribed additional medications for chronic control versus seizure breakthrough management. Examples include levetiracetam, valproic acid, or lamotrigine, among others.[19]

Potentially Inappropriate Use

The Beers Criteria were originally published in 1991 and have been updated five times since to provide guidance about how to manage inappropriate medication use in patients aged 65 years or older. Benzodiazepines have consistently appeared on updated versions of the list. The latest 2019 update lists a "strong" recommendation to avoid benzodiazepine use based on "moderate" quality evidence. The article states that older adults have increased sensitivity and decreased metabolism of long acting agents. Additionally, benzodiazepines increase risk of cognitive impairment, delirium, falls, fractures, and motor vehicle accidents in older adults. Benzodiazepines may be appropriate for older adults with seizure disorder, rapid eye movement sleep behavior disorder, benzodiazepine withdrawal, ethanol withdrawal, severe generalized anxiety disorder, and periprocedural anesthesia, however these agents should be avoided where alternative options exist.[20] Aside from older adults, benzodiazepines should be avoided among patients with a history of alcohol or other substance abuse due to the risk of dependence.[1] Table 3 lists additional candidates, some of whom will be described in further detail below.

Table 3: Potentially Inappropriate Candidates for Benzodiazepine Use[14, 20-22]

- Current or history of substance abuse (see Table 1)*
- Adults ≥ 65 years
- Adverse effects or drug interactions identified (e.g., fall history, concomitant opioid use)
- No indication for use or alternative therapies are proven safer and/or more effective
- Regular benzodiazepine use > 4 weeks
- Willing participants without limitations to deprescribing (e.g. seizure disorder)
- Pregnancy (FDA pregnancy category D or X; lactation risk category L2-4)

*Patients with active substance use disorder may require specialized intervention for deprescribing

Benzodiazepine use has been a popular replacement for out of date therapies, like barbiturates, but as we quantify the risks over time and learn about more effective treatment options, benzodiazepine use has been slowly replaced by alternatives. In particular cases where benzodiazepines may be considered, they are commonly recommended at the lowest effective doses for the shortest effective durations.

Anxiety

When assessing appropriate use of benzodiazepines for anxiety disorders, it is important to acknowledge varying recommendations among different types of anxiety, including but not limited to generalized anxiety disorder (GAD), social phobia, and panic disorder (PD). In conjunction with nonpharmacologic therapy, the guidelines generally recommend an SSRI or SNRI as first line pharmacologic treatment options for GAD and PD.[23-25] However, benzodiazepines may be carefully considered under unique circumstances.

The Anxiety and Depression Association of America revised 2015 guidelines support using diazepam, alprazolam, clonazepam, or lorazepam as second-line therapy in adults with GAD.[23] However, according to the 2015 American Family Physician (AFP) guidelines for GAD and PD, benzodiazepine utility is limited by risks of abuse and adverse effects. The above options may be recommended in combination with antidepressants during times of crises, but only for short-term use given the risk of tolerance. AFP suggests alternatives to alprazolam given the increased risk of addiction and adverse effects attributed to its pharmacokinetic profile.[24] The 2011 NICE guidelines (The National Institute for Health and Care Excellence) support AFP guidance by suggesting to avoid benzodiazepine use as first or second line treatment options for GAD. It also recognizes an exception for short-term use during crises.25

Given that first line options like SSRIs and SNRIs can take at least 4-12 weeks to recognize full effects, sometimes benzodiazepines are prescribed in the interim for short-term control of anxiety. Although benzodiazepines may speed recovery from anxiety-related disorders, they are not shown to improve long-term outcomes.[24] According to one systematic review and meta-analysis of nine randomized studies, combination use of an approved antidepressant

with a benzodiazepine for comorbid anxiety and depression can lower rates of therapy discontinuation and raise clinical improvement rates when compared to antidepressant monotherapy.[1] The analysis revealed use of a wide variety of benzodiazepine agents thus it is important to refer to the pharmacokinetic differences and most up to date literature when individualizing therapy. Clonazepam and other intermediate to long acting agents may be preferred given a lower likelihood of abuse and rebound symptoms.[24] Since it can be difficult to assess whether benzodiazepine use is appropriate in the context of anxiety, it is important to notify a prescriber when patients experience adverse effects, tolerance, dependence, or abuse, or when suboptimal management of comorbid conditions is recognized.

Posttraumatic Stress Disorder

Posttraumatic stress disorder, otherwise known as PTSD, is a serious condition that affects people of all ages and socioeconomic backgrounds. It is diagnosed according to characteristic symptoms following exposure to one or more traumatic events.[26] The Departments of Veterans Affairs and Defense (VA/DoD) issued guidance in 2017 about managing PTSD and acute stress disorder.[27] Historically alprazolam and clonazepam were used as primary treatment or on an as needed basis despite lack of evidence to support their use. Although the quality of evidence is considered "very low," the guidelines strongly recommend against the use of benzodiazepines as monotherapy and/or as augmentation therapy (use in combination with first line agents). Their recommendation is based on the lack of strong evidence regarding safe and effective use for this purpose. The VA/DoD suggests the risks of tolerance and dependence outweigh any proposed benefit for the condition. Tolerance and dependence are also important considerations as significant withdrawal symptoms may limit the ability to deprescribe these agents easily.[27] NICE published guidelines in 2018 which highlight nonpharmacologic treatment for the condition, including cognitive behavioral therapy. Benzodiazepines are not recommended for PTSD prevention in adults.[28] Importantly neither guideline addresses PTSD treatment in combination with comorbid physical or psychiatric conditions and only discuss benzodiazepine use within the context of PTSD as a sole condition.

Insomnia

Nonpharmacologic treatment options should always be recommended prior to or in addition to pharmacologic treatment for insomnia. Table 4 lists nonpharmacologic options. Among other therapies, the 2017 American Academy of Sleep Medicine Clinical Practice Guideline for treating chronic insomnia in adults considers only two benzodiazepines for sleep onset (triazolam or temazepam) and/or sleep maintenance insomnia (temazepam).[29] As highlighted previously, triazolam and temazepam have unique pharmacokinetic properties compared to alternatives which may justify their use in these cases. Of note, all recommendations addressed in these guidelines are considered "weak" based on a lower degree of certainty in the appropriateness of medication use. There are no "strong" recommendations listed of which clinicians should follow under most circumstances when pharmacologic treatment is indicated. Triazolam is recommended for sleep onset insomnia versus no treatment in adults with a "high" quality of evidence where benefits of use are approximately equal to harms. Temazepam is recommended over no treatment for sleep onset or sleep maintenance insomnia with a "moderate" quality of evidence where benefits outweigh harms. Insufficient data were revealed about adverse events associated with triazolam use, however speech disorder was identified by Hajak and colleagues to be the only

Table 4: Nonpharmacologic Management of Insomnia[30-31]

Treat underlying conditions that contribute to insomnia including anxiety, depression, chronic pain
Identify use of medications with stimulating or sedating properties and consider alternative administration times to take advantage of these side effects
Cognitive behavioral therapy (CBT)
Go to bed only when sleepy; leave if unable to fall asleep for longer than 15-20 minutes
Use the bed and bedroom only for sleep and sexual activity
Keep fixed sleep and wake times each day
Challenge dysfunctional thoughts associated with sleep to decrease anxiety associated with insomnia
Optimize light, bedroom temperature that are conducive to sleep
Avoid heavy meals or exercise, nicotine, caffeine, and alcohol prior to bedtime
Avoid taking naps during the day
Relaxation training during the day, prior to bedtime and at night when unable to sleep
*Importantly, there is limited data to support any of the above as monotherapy. Multiple strategies should be used concomitantly to optimize sleep.

adverse effect with more significant frequency in the triazolam group versus placebo. Limited data were also available regarding harms associated with temazepam use. Temazepam was associated with increased headache, blurred vision, depression, and confusion according to Cuanang, et al, and drowsiness, lethargy, and vertigo according to Heffron et al, however the frequency was low. The higher dose 30 mg strength (vs. 15 mg) may cause daytime impairment but the guidelines task force concluded that benefits may outweigh risks for the lower 15 mg strength. When used, temazepam should be considered at the lower dose based on both efficacy and safety data. Based on a patient value and preferences assessment, "the majority of patients would use [these treatments] (over no treatment), but many would not." In general, the guidelines recommend that clinical judgment be used in conjunction with patient preference when choosing to treat insomnia pharmacologically. When prescribed, the guidelines recommend short-term, intermittent use (less than five times weekly) and caution is advised regarding the risks of tolerance or rebound insomnia.[29]

The guidelines present similar recommendations for using benzodiazepine receptor agonists (BZRAs).[29] These are non-benzodiazepine medications that act at the same GABA receptor and should not be prescribed with benzodiazepines due to similar mechanisms. Examples include zolpidem, zaleplon, and (es) zopiclone, otherwise known as "Z drugs." They were developed as benzodiazepine alternatives with slightly different structures to produce fewer anxiolytic and anticonvulsant effects.[21] However, they are not without risks. BZRAs share the same schedule IV CDS status as benzodiazepines, due to increased abuse potential. Concerns still exist with regard to drug drug interactions (i.e., CNS depressants).[21] They are addressed in The Beers Criteria with similar risks as benzodiazepines in older adults, including delirium, falls, fractures, increased emergency room visits, hospitalizations, and motor vehicle crashes, with limited effectiveness for insomnia.[20] These recommendations allude to the importance of discussing risks and benefits of benzodiazepine and BZRA use, setting appropriate patient expectations and readdressing treatment at all follow up visits.

Evidence for Deprescribing

To act upon the guidance above, evidence-based strategies for deprescribing are needed. The evidence for deprescribing largely targets older adults, but similar messaging applies to patients in other age categories. In 2014, a cluster randomized trial was published in JAMA abbreviated as EMPOWER (Eliminating Medications through Patient Ownership of End Results).[31] The study took place from June 2010 to May 2013 in the Greater Montreal Area and recruited 30 Canadian community pharmacies and 303 patients aged 65 years or older, using at least five medications including at least 3 months of "potentially inappropriate" benzodiazepine use. Benzodiazepine use was deemed "potentially inappropriate" primarily based on patient age. Patients were excluded for the following reasons: severe mental illness, dementia, or epilepsy; concomitant antipsychotic, anticonvulsant, cholinesterase inhibitor, or memantine use. In the intervention group, 148 patients from 15 pharmacies received an eight page booklet with education about benzodiazepine risks, deprescribing, and a 21 day tapering protocol (see educational highlights in Table 5). The control group (155 patients from 15 pharmacies) received usual care. At 6 month follow up, there was a statistically significant reduction in benzodiazepine use in the intervention group (27%) compared to the control group (4.5%, adjusted OR 8.33, 95% CI: 3.32 - 20.93, NNT = 4.35). Cessation or reduced benzodiazepine use occurred in 37.8% of the intervention group versus 11% in the control group (adjusted OR 5.49, 95% CI 2.78 - 10.84, NNT 3.70).[31]

The study had a short six month follow up period, which may not account for potential benzodiazepine relapse. It excluded patients who could likely benefit from discontinued benzodiazepine use, however may experience greater risks with regard to relapse or adverse effects from tapering (e.g., seizures among patients using anticonvulsants). There was low recruitment (18% of pharmacies and 11% of patients participated) and the study did not assess patients who substituted benzodiazepines with alternative potentially inappropriate therapies including "Z-drugs."[31] Despite these criticisms, the study introduces a feasible education and tapering strategy for benzodiazepine deprescribing with statistically significant results that likely lead to important clinical outcomes such as reduced risk of sedation or fall in elderly adults.

In 2018, a sequel to EMPOWER was published in JAMA which aimed to further reduce inappropriate medication use among older, community-dwelling adults. The trial, called D-PRESCRIBE, aimed to assess whether a pharmacist-led educational intervention could reduce inappropriate prescriptions among community-dwelling adults.[32] Patients were included for randomization if they lived in Quebec with age 65 years or older and taking a sedative-hypnotic, first-generation antihistamine, glyburide, and/or nonsteroidal anti-inflammatory drug (NSAID) for at least 3 consecutive months. Sedative-hypnotic agents included all benzodiazepines and "Z drugs." Pertinent exclusion criteria were residence in an assisted living facility, use of antipsychotics, memantine and/or cholinesterase inhibitors and significant cognitive impairment,

Table 5: Counseling points for patients using benzodiazepines. Adapted from the EMPOWER Trial pamphlet[31]
Age
"We process medications differently as we age. Drugs may stay in our bodies longer and reduced liver and kidney function can increase side effects."
"Even when used as prescribed, this medication can increase the risk of falls, memory problems, and involuntary urine loss."
Indication
"Other medications are available that are preferred over benzodiazepines to treat anxiety and insomnia. These medications are generally better tolerated."
"There are many ways to improve insomnia and anxiety that do not require medications. Are you interested to discuss some strategies today?"
"This medication may have been helping you but it is not recommended to use for longer than 4 weeks."
Risks
"Even when used as prescribed, this medication can have side effects such as feeling tired or off balance. More serious side effects include slowed breathing, and even coma or death."
"Even when used as prescribed, this medication has a risk of tolerance which means that increasingly higher doses of medication are required to achieve the same desired effect. Sometimes people become dependent on the medication, even if they do not intend to."
Drug Interactions
"Even when used as prescribed, this medication can increase the risk of side effects when used with another medicine that you are taking."

defined as a score < 24 on the mini-mental state examination (MMSE). Patients received an educational brochure in the mail and the pharmacist contacted the prescriber to recommend evidence-based deprescribing. The intervention group included 248 patients from 34 pharmacies while the control group included 241 patients from 35 pharmacies who received usual care. At six month follow up, 43% of patients in the intervention group no longer filled prescriptions for inappropriate medications while the same was true for 12% in the control group (risk difference, 31% [95% CI, 23% to 38%]). Specifically, sedative-hypnotics were discontinued in 43.2% of patients in the intervention group versus 9% in the control group (risk difference, 34% [95% CI, 25% to 43%]). The authors calculated that three patients would require the intervention to result in one ceased prescription renewal for all medication categories (NNT=3). They concluded that among older adults in Quebec, this pharmacist-led intervention resulted in greater discontinuation of inappropriate medication use at six month follow up compared to standard of care. Additionally, they state that further studies are required to assess generalizability to other settings.[32]

A systematic review was conducted by Pottie and colleagues in 2018 to develop evidence based practice guidelines about deprescribing benzodiazepines and BZRAs for insomnia.[14] Under these circumstances, two key patient populations are highlighted for which deprescribing should be considered: adults 65 years of age or older regardless of duration of use, and adults age 18-64 years who have used the medication for longer than four weeks. These recommendations apply to patients using agents to treat primary insomnia or comorbid insomnia where underlying etiologies are effectively managed. The guidelines do not apply to those with other sleep disorders or untreated physical or mental health disorders including anxiety or depression.[14] Guidance was since issued by Thompson, et al in March 2018 to deprescribe medications including benzodiazepines. The instruction manual includes a letter template for involving clinical reviewers in protocol development. There is also a deprescribing algorithm available[33] and more information available at deprescribing.org.

Deprescribing Principles

Once an appropriate candidate for deprescribing is selected (refer to Table 3), it is helpful to consider the enablers and barriers to describe from various perspectives. Prescribers may be hesitant to deprescribe when they believe that benefits outweigh risks. Deprescribing may be a low priority during patient visits with limited time, prescriber training, or reimbursement opportunities to address deprescribing. On the other hand, enablers include knowledge, experience, training, and perceived benefit to the patient with discontinued use.[34] Patients may or may not be willing to consider deprescribing based on similar circumstances. According to a follow up analysis of the EMPOWER trial, called "A realist evaluation of patient decision to deprescribe in the EMPOWER trial," successful deprescribers were more likely to report the following: stable health status, confidence about deprescribing, perception of increased risk with continued use, lack of psychological attachment to the drug, a positive outlook on aging, utility of the available tapering tool, and previous or continued support from a healthcare provider. Unsuccessful deprescribers were more likely to report the opposite in addition to intolerable withdrawal

symptoms.[34] This information helps inform candidate selection prior to discussing specific deprescribing strategies with patients and their prescribers.

Once patients and prescribers agree to deprescribe, an appropriate dose tapering strategy is recommended to avoid intolerable withdrawal symptoms. A taper may not always be required but is recommended for patients using frequent, high doses, or scheduled dosing regimens. The systematic review by Pottie and colleagues lists several tapering strategies used for deprescribing sedative-hypnotics.[14] In general, the total daily dose was reduced by 10-25% every 1-2 weeks until discontinuation. In some cases, more aggressive dose reduction was chosen up front while less aggressive strategies were employed as the dose was reduced. When half the total daily dose is achieved, some studies held the dose for a month or more then continued to taper thereafter. The approach should be individualized as some patients may have less severe withdrawal symptoms or a higher tolerability of withdrawal effects which could warrant more aggressive de-escalation. A valid strategy would be to air on the side of less aggressive dose reduction with changes dependent on patient tolerability, success, and preference. The key is to avoid increasing the dose and to be sure the patient knows not to use benzodiazepines as needed to treat withdrawal. Strategies identified by Pottie and colleagues align with information described in the Ashton Manual, another useful resource that shares clinical experience with deprescribing.[35-36]

Substantial education may be required to set patient expectations and guide prescribers with limited deprescribing experience. Depending on the starting benzodiazepine dose and patient tolerability, it may take several weeks or months to achieve discontinuation. Additionally, patients should be aware that signs and symptoms of withdrawal could mirror the original indications for use (e.g., insomnia, anxiety). Discussion with the patient is encouraged to identify strategies for avoiding benzodiazepines during times when its use has perceived benefit (i.e. to avoid withdrawal symptoms). With varied tapering strategies comes logistical concerns about prescribing in accordance with insurance requirements. Since it is common to deprescribe benzodiazepines in two week increments, new prescriptions can be sent every two weeks. Alternatively, a one month supply is appropriate if the same tablet strength will be used to taper over the course of four weeks. Notably, the patient's tapering schedule may differ from instructions on the prescription label. It is always recommended to clarify that the patient knows which instructions to follow and has a way to contact the prescriber should the patient experience withdrawal.

There is no gold standard approach to deprescribing and it requires individualization, however a few critical strategies are listed in Table 6. Although several barriers can be overcome with effective, evidence-based communication to both patients and prescribers, there may still be insurmountable barriers to successful deprescribing at the current time. It is important

Table 6: Proposed Strategies to Overcome Barriers to Deprescribing[14, 21, 34, 36]

Barrier	Strategy
Uncertainty about candidacy	Refer to Table 3 for a proposed list of appropriate candidates
Prescriber or patient pushback	• Use available evidence as grounds to discuss benefits of deprescribing and risks associated with continued use • Utilize motivational interviewing techniques
Fear of withdrawal	• Describe a regimen to reduce total daily dose by 10-25% every 1-2 weeks as tolerated • Set appropriate expectations and offer contingency plan if patient experiences intolerable withdrawal
Actual signs or symptoms of withdrawal	• Consider holding current dose longer than anticipated (e.g., one additional week or more) • Never increase the dose, nor recommend prn benzodiazepine use to offset withdrawal • Consider cognitive behavioral therapy
Lack of patient confidence	• Reassure the patient and offer method of communication with healthcare provider • Set appropriate expectations and refer to contingency plan as needed

to recognize the benefits of reduced benzodiazepine doses and/or frequency, even if the patient is unable to achieve total discontinuation. Reassure the patient about their progress even if things are not going according to plan. Reasons for unwillingness to continue tapering may include a substantial life event that takes priority over the patient's desire to deprescribe. A break may be warranted while the patient caters to pressing matters in their lives. This is where communication is key to be sure the patient knows how to maintain current success and follow up later to continue the process.

Although benzodiazepines are often appropriately prescribed, their use should be reconsidered regularly as patient age, comorbidities, and medication lists change. Pharmacists must be comfortable discussing the risks and benefits with patients and their prescribers. When an appropriate candidate is identified for deprescribing, a dose taper should never be employed without prior discussion with the prescriber. In the community pharmacy setting, a pharmacy technician may be the only healthcare professional who encounters the patient during prescription drop off or medication pick up. In these cases, it can be helpful to identify patients who require additional counseling. However, pharmacy technicians should not discuss the appropriateness of benzodiazepine use with patients without a pharmacist present. Once all parties agree to deprescribe, patients can be educated about what to expect and how to succeed while tapering.

Case Questions

ST is a 72 year old Caucasian female who presents to the pharmacy counter to pick up her medications. Her past medical history includes hypertension, osteoarthritis, vitamin D deficiency, insomnia, alcohol use disorder (last used in 2010) and generalized anxiety disorder. She denies any pain and reports measuring her blood pressure this morning (128/76 mmHg) without experiencing signs/symptoms of hypotension at home. She denies any missed doses of lisinopril/HCTZ 20/25 mg PO qday, tramadol 100 mg PO qday, or ergocalciferol 50,000 IU PO weekly. She is prescribed trazodone PO qhs prn insomnia and alprazolam 0.5 mg PO TID prn anxiety. She reports using trazodone nightly and alprazolam at least BID but more often TID in the last two months given her recent worry about her sister's declining health. She hands you a new prescription for alprazolam which she has taken as prescribed for many years.

Questions:

1. Which of the following is required for controlled drug substance prescriptions but not for non-controlled prescriptions?

a. Prescriber DEA number
b. Number of refills
c. Drug formulation
d. Patient allergies

2. Based on SL's medication profile, which agent are you most concerned about for increased risk of CNS depression when used with alprazolam?

a. Ergocalciferol
b. HCTZ
c. Lisinopril
d. Tramadol

3. Based on the information in the case, for which of the following is it appropriate to consider alternative treatment?

I. Hypertension, II. Generalized Anxiety Disorder, III. Osteoarthritis

a. I and II
b. I and III
c. II and III
d. I, II, and III

4. Should SL be referred to the pharmacist for further counseling?

a. No, SL is using alprazolam as prescribed and does not require further counseling
b. Yes, the pharmacist should educate SL that there are alternative, guideline recommended options to manage her anxiety and encourage her to speak with her doctor about their use
c. Yes, SL is an older adult and is taking multiple CNS depressants, which puts her at increased risk for adverse effects
d. B and C

5. After discussing your concerns about her medication use history, SL is interested to speak with her doctor about reconsidering benzodiazepine use. Which of the following is an appropriate counseling point for SL?

a. Stop using alprazolam today and schedule an appointment with your doctor as soon as possible to consider alternative therapy
b. Abrupt discontinuation of the medication is not recommended. It is important to discuss an appropriate tapering strategy with your provider to help manage withdrawal symptoms
c. It may be appropriate to continue use given your history of alcohol use disorder
d. Talk to your doctor first, but generally, it is best practice to abruptly discontinue the alprazolam to avoid drug interactions as soon as possible

Answers on page 21

REFERENCES

1. Dunlop BW, Davis PG. Combination Treatment With Benzodiazepines and SSRIs for Comorbid Anxiety and Depression. *The Primary Care Companion to The Journal of Clinical Psychiatry*. 2008;10(03):222-228. doi:10.4088/pcc.v10n0307.
2. Vinkers CH, Olivier B. Mechanisms Underlying Tolerance after Long-Term Benzodiazepine Use: A Future for Subtype-Selective Receptor Modulators? *Advances in Pharmacological Sciences*. 2012;2012:1-19. doi:10.1155/2012/416864.
3. Wick JY. The History of Benzodiazepines. *The Consultant Pharmacist*. 2013;28(9):538-548. doi:10.4140/tcp.n.2013.538.
4. Hillhouse TM, Porter JH. A brief history of the development of antidepressant drugs: From monoamines to glutamate. *Experimental and Clinical Psychopharmacology*. 2015;23(1):1-21. doi:10.1037/a0038550.
5. Center for Drug Evaluation and Research. New Safety Measures Announced for Opioid Analgesics, Prescription Opioid Cough Products, and Benzodiazepines. U.S. Food and Drug Administration. https://www.fda.gov/drugs/information-drug-class/new-safety-measures-announced-opioid-analgesics-prescription-opioid-cough-products-and. Accessed March 17, 2020.
6. National Institute on Drug Abuse. Benzodiazepines and Opioids. NIDA. https://www.drugabuse.gov/drugs-abuse/opioids/benzodiazepines-opioids#Reference. Published March 15, 2018. Accessed March 17, 2020.
7. Maryland Board of Pharmacy. 10.19.03 Controlled Dangerous Substances. Division of State Documents. http://www.dsd.state.md.us/comar/SubtitleSearch.aspx?search=10.19.03. Accessed March 17, 2020.
8. Title 21 United States Code (USC) Controlled Substances Act. Section 829. https://www.deadiversion.usdoj.gov/21cfr/21usc/829.htm. Accessed March 17, 2020.
9. Prescription Drug Monitoring Program (PDMP). CRISP. https://crisphealth.org/services/prescription-drug-monitoring-program-pdmp/. Accessed March 17, 2020.
10. Maryland Department of Health. Important Information Regarding Maryland Prescription Drug Monitoring Program Latest Legal Requirements for Pharmacists and Prescribers. https://crisphealth.org/wp-content/uploads/2018/05/PDMP-Legislation-Fact-Sheet-_Version-V_May-1-2018. Accessed March 17, 2020.
11. PDMP Frequently Asked Questions. PDMP_FAQs. https://bha.health.maryland.gov/pdmp/Pages/-PDMP_FAQs.aspx. Accessed March 17, 2020.
12. National Association of Boards of Pharmacy. Stakeholders' Challenges and Red Flag Warning Signs Related to Prescribing and Dispensing Controlled Substances. https://nabp.pharmacy/wp-content/uploads/2016/07/Red-Flags-Controlled-Substances-03-2015. Accessed March 17, 2020.
13. Griffin CE 3rd, Kaye AM, Bueno FR, Kaye AD. Benzodiazepine pharmacology and central nervous system-mediated effects. *Ochsner J*. 2013;13(2):214–223.
14. Pottie K, Thompson W, Davies S, et al. Deprescribing benzodiazepine receptor agonists: Evidence-based clinical practice guideline. *Can Fam Physician*. 2018;64(5):339–351.
15. Comparison of benzodiazepines. http://www.vhpharmsci.com/VHFormulary/Tools/Benzodiazepines-comparison.htm. Accessed March 17, 2020.
16. Kim PM, Weinstein SL. Benzodiazepines: Johns Hopkins Psychiatry Guide. Benzodiazepines | Johns Hopkins Psychiatry Guide. https://www.hopkinsguides.com/hopkins/view/Johns_Hopkins_Psychiatry_Guide/787140/all/Benzodiazepines. Accessed March 17, 2020.
17. Management of alcohol withdrawal. World Health Organization. https://www.who.int/mental_health/mhgap/evidence/alcohol/q2/en/. Published October 8, 2015. Accessed March 17, 2020.
18. Glauser T, Shinnar S, Gloss D, et al. Evidence-Based Guideline: Treatment of Convulsive Status Epilepticus in Children and Adults: Report of the Guideline Committee of the American Epilepsy Society. *Epilepsy Currents*. 2016;16(1):48-61. doi:10.5698/1535-7597-16.1.48.
19. Evidence: Epilepsies: diagnosis and management: Guidance. NICE. https://www.nice.org.uk/guidance/cg137/evidence. Accessed March 17, 2020.
20. American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. *Journal of the American Geriatrics Society*. 2019;67(4):674-694. doi:10.1111/jgs.15767.
21. Benzodiazepine and Z-Drug Safety Guideline. Kaiser Permanente. https://wa.kaiserpermanente.org/static/pdf/public/guidelines/benzo-zdrug.pdf. Accessed March 17, 2020.
22. Armstrong C. ACOG Guidelines on Psychiatric Medication Use During Pregnancy and Lactation. *Am Fam Physician*. 2008 Sep 15;78(6):772-778.
23. Powers M, Becker E, Gorman J, Kissen D, Smits J. Clinical practice review for GAD. Anxiety and Depression Association of America. https://adaa.org/resources-professionals/practice-guidelines-gad. Accessed March 17, 2020.
24. Lock A, Kirst N, Schultz CG. Diagnosis and management of generalized anxiety disorder and panic disorder in adults. *Am Fam Physician*. 2015 May 1;91(9):617-624.
25. Evidence: Generalised anxiety disorder and panic disorder in adults: management: Guidance. NICE. https://www.nice.org.uk/guidance/cg113/evidence. Accessed March 17, 2020.
26. Trauma- and Stressor-Related Disorders. *Diagnostic and Statistical Manual of Mental Disorders*. 2013. https://dsm.psychiatryonline.org/doi/full/10.1176/appi.books.9780890425596.dsm07. Accessed March 17, 2020. doi:10.1176/appi.books.9780890425596.dsm07.
27. Department of Veterans Affairs and Department of Defense. VA/DoD Clinical practice guideline for the management of posttraumatic stress disorder and acute stress disorder. 2017. https://www.healthquality.va.gov/guidelines/MH/ptsd/VADoDPTSDCPGFinal012418.pdf. Accessed March 17, 2020.
28. Recommendations: Post-traumatic stress disorder: Guidance. NICE. https://www.nice.org.uk/guidance/ng116/chapter/Recommendations#management-of-ptsd-in-children-young-people-and-adults. Accessed March 17, 2020.
29. Sateia MJ, Buysse DJ, Krystal AD, Neubauer DN, Heald JL. Clinical Practice Guideline for the Pharmacologic Treatment of Chronic Insomnia in Adults: An American Academy of Sleep Medicine Clinical Practice Guideline. *Journal of Clinical Sleep Medicine*. 2017;13(02):307-349. doi:10.5664/jcsm.6470.
30. Siebern AT, Suh S, Nowakowski S. Non-Pharmacological Treatment of Insomnia. *Neurotherapeutics*. 2012;9(4):717-727. doi:10.1007/s13311-012-0142-9.
31. Tannenbaum C, Martin P, Tamblyn R, Benedetti A, Ahmed S. Reduction of Inappropriate Benzodiazepine Prescriptions Among Older Adults Through Direct Patient Education. *JAMA Internal Medicine*. 2014;174(6):890. doi:10.1001/jamainternmed.2014.949.
32. Martin P, Tamblyn R, Benedetti A, Ahmed S, Tannenbaum C. Effect of a Pharmacist-Led Educational Intervention on Inappropriate Medication Prescriptions in Older Adults. *Jama*. 2018;320(18):1889. doi:10.1001/jama.2018.16131.
33. Thompson W, Pizzola L, Hogel M, Black CD, Farrell B. Developing an evidence-based deprescribing guideline: instruction manual for guideline coordinators (working document). 2018 https://deprescribing.org/resources/ deprescribing-guidelines-algorithms. Accessed March 17, 2020.
34. Anderson K, Stowasser D, Freeman C, et al. Prescriber barriers and enablers to minimising potentially inappropriate medications in adults: a systematic review and thematic synthesis. BMJ Open 2014;4:e006544. doi:10.1136/bmjopen-2014- 006544.
35. Clinical Toolkit: Benzodiazepine Use and Taper. College of Physicians and Surgeons of Alberta. http://www.cpsa.ca/wp-content/uploads/2016/08/Clinical-Toolkit_BDZ_Nov_2016.pdf. Accessed March 17, 2020.
36. The Ashton Manual. https://www.benzo.org.uk/index.htm. Accessed March 17, 2020.

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The authors have no financial disclosures to report.

This program is Knowledge Based — acquiring factual knowledge that is based on evidence as accepted in the literature by the health care professionals.

Directions for taking this issue's quiz:
To receive CE credit for this activity, participants must read the article in its entirety, complete an evaluation survey on the activity, and earn a grade of 70% or higher on a short exam.

This issue's quiz on **Considering the Evidence to Assess Benzodiazepine Use** can be found online at:

For pharmacists:
https://www.papharmacists.com/surveys/?id=BenzodiazepineUse

For pharmacy technicians:
https://www.papharmacists.comsurveys/?id=ConsideringEvidence

(1) Enter your name and contact information.

(2) Take the quiz and click "Complete Quiz."

ANSWERS

1. **Answer A.** It would be inappropriate to fill a controlled prescription (II-V) that is missing a DEA number, according to Maryland and federal law [A is correct]. If the prescription does not list refills, you can legally assume there are none [B is incorrect]. All prescriptions require a patient name, drug name, strength, dosage form, quantity prescribed, directions for use, and the name and signature of the prescriber [C is incorrect]. It is best practice to ask the patient about allergies at the time of all prescription fills, however this information is not required to be documented on the prescription [D is incorrect].

2. **Answer D.** Tramadol is the only answer choice provided that is known to increase risk for CNS depression, particularly when used with a benzodiazepine (i.e. alprazolam) [D is correct]. Ergocalciferol is generally well tolerated without risk for CNS depression. [A is incorrect]. While HCTZ and lisinopril may increase risk for hypotension, particularly among older adults, they do not include CNS depressant effects in their labeling [B & C are incorrect]. There is a black box warning for concomitant use of opioids with benzodiazepines due to risks for profound sedation, respiratory depression, coma, and death. Recommendations are to avoid concomitant use unless other treatment options have failed. Common opioids include oxycodone, hydrocodone, and methadone. It is often forgotten that tramadol is also an opioid. Prescribers may consider tramadol less habit forming than other opioids, due to its classification as a partial agonist on opioid receptors. But users are still at risk for developing dependence. Importantly, trazodone can also increase risk for CNS depression and SL could benefit from alternative pharmacologic and/or nonpharmacologic treatment options to improve sleep.

3. **Answer C.** Per patient report, SL's blood pressure is well controlled < 130/80 mmHg per ACC/AHA guidelines and she is adherent to lisinopril/HCTZ without signs/symptoms of hypotension [A, B & D are incorrect]. Given SL's age, concomitant CNS depressant use puts her at greater risk of adverse effects than the general population. With a history of alcohol abuse, it is appropriate to avoid tramadol and benzodiazepines altogether, if possible, since she may have increased risk for dependency [C is correct]. She denies any pain at today's visit and could benefit from using an alternative medication to tramadol that does not increase her risk for CNS depression. She reports using alprazolam more frequently now that she is worried about her sister. SL would likely benefit from counseling about non-pharmacologic interventions, and a psychiatric evaluation may be warranted to assess her anxiety and consider the need for alternative treatment like an SSRI or SNRI.

4. **Answer D.** Even though SL is using alprazolam as prescribed, this does not mean that it is the best option for her. She may have been taking it for many years, but we should not assume that she is aware of the associated risks [A is incorrect]. Alprazolam may work well to control her anxiety related symptoms but there are alternative pharmacologic and nonpharmacologic options that are recommended first line, with better safety and effectiveness profiles [B is correct]. A benzodiazepine alternative will limit her risk for dependence and adverse effects, particularly when used with other CNS depressants like tramadol or trazodone. SL has increased risk for adverse effects based on her age and concomitant medication use [C is correct].

5. **Answer B.** Abrupt discontinuation is not recommended, especially since SL has been taking a higher, scheduled dose of the medication for several weeks [A & D are incorrect]. SL should schedule an appointment with her prescriber prior to discuss an appropriate tapering strategy to avoid adverse effects and optimize successful discontinuation [B is correct]. SL's history of substance abuse makes her a candidate for deprescribing and highlights the need to avoid continued use without an evidence based indication [C is incorrect].

Editorial

Legislative Update

As with many things in Maryland, due to COVID-19 precautions the General Assembly went through a series of reductions in public interaction and ultimately closed the legislative session early.

Our legislative priorities related to prescriptive authority for tobacco cessation, administration of maintenance injectable medications and e-prescribing for controlled dangerous substances had significant movement. The bills had been negotiated over several years and had reached a level of consensus with stakeholders that facilitated their positive movement. They were poised to pass. Ultimately, with the early closure, we simply ran out of time. We look forward to quick and early action on this legislation next year.

Bills of interest that did pass include the following:

HB 1273 — Health Insurance — Audits of Pharmacies or Pharmacists — Authorization to withdraw and resubmit claims

- Requires PBMS to allow the withdrawal and resubmittal of claims within 30 days after a preliminary audit is delivered or if a pharmacy or pharmacist requests an internal audit, or 30 days after the conclusion of the internal appeals process.

HB 749 — Health Occupations — Dental Hygienists — Authority to Prescribe and Administer Medication

- Limited authority under delegation of a physician, specific medications and circumstances

HB 978/SB 80 — Maryland Insurance Administration — Pharmacy Service Administrative Organizations

- Requires PSAOs to register with the Maryland Insurance Administration by July 1, 2021.

SB 0931/HB 652 — Maryland Medical Assistance Program and Health Insurance — Specialty Drugs — Definition

- Drugs prescribed to treat, diabetes, HIV or AIDS may not be considered specialty drugs
- May not impose a co-payment or coinsurance requirement on the above mentioned drugs that exceeds $150 for a 30-day supply
- Price may be adjusted up annually according to Regional CPI

HB 1307 — Pharmacy Benefit Managers — Credentialing and Reimbursement

- Prohibits post point of sale GER and DIR fees
- Prohibits requirements for pharmacy/pharmacist credentialing more frequently than three years
- Prohibits charges for initial and renewal credentialing

HB 663 — Prescription Drug Monitoring Program — Out-of-State Pharmacists and Discipline for Non-compliance

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Executive Director's Message

Are Associations Essential?

As I write this message, the state of Maryland is in its 9th week of a state-declared public health emergency for the coronavirus pandemic. COVID-19 news floods our inboxes and daily video conferences. Nothing is "business as usual". Community pharmacies remain open, many curbside or delivery only, to provide essential medications and services to their patients. Health-system pharmacies move from the preparatory phase to the planning phase and in some hospitals the surge phase, with policies around drug shortages, personnel, and infection control changing daily. Senior care pharmacists face unique challenges as outbreaks hit nursing homes and pharmacists are not allowed inside to perform consulting. Regardless of practice setting, pharmacist roles are different today than they were only a few weeks ago.

Just as a rise in COVID-19 cases is inevitable, it is also inevitable that pharmacists and pharmacy technicians will continue to be front and center during this public health emergency. Pharmacists and pharmacy technicians are essential members of the healthcare team and essential members of the frontline workforce. **YOU — MPhA members, are among the healthcare champions who have risen to the challenge** — one community, one facility, one patient at a time.

While pharmacists and pharmacy technicians are essential, what about the association that represents you? Is MPhA essential? I say YES! We are engaged in important advocacy, more relevant information sharing, and education. We are also providing needed support, MPhA staff has gotten so many calls from members just wanting to talk and we are here to support you in any way we can.

I spend my days culling through information from every direction and providing advocacy to state agencies including the Board of Pharmacy, Maryland Department of Health, Maryland Medicaid, and more on your behalf. MPhA continues to be in communication with all members of Maryland's congressional delegation and regularly collaborating with national pharmacy organizations to communicate pressing concerns to federal agencies. Thank you to so many of our members who have provided insights, recommendations and clinical explanations so that our messages to decision-makers are clear. Our highest priority is to advocate for you as essential healthcare providers who should be paid for your service.

We continue to extract the most relevant updates for Maryland pharmacists and regularly update our COVID-19 resource page. We have hosted check-ins and town halls to discuss COVID-19 and membership well-being. We have shared information to keep the public informed of pharmacists' important work during the pandemic and raised awareness of impending drug shortages, COVID testing, and expanding pharmacists' role to provide care during this pandemic.

> **"Thank you to so many of our members who have provided insights, recommendations and clinical explanations so that our messages to decision-makers are clear, Our highest priority is to advocate for you as essential healthcare providers who should be paid for your service."**

In addition to relevant information and important advocacy in real time, we're doing what associations do – strategically planning for the future. The MPhA Board and staff are discussing long-term implications of COVID-19 on the pharmacy profession and what the next "normal" looks like for you and MPhA.

Whether or not you define MPhA as "essential," I am convinced that our work has never been more important than it is right now. We represent members of a profession who are 100% essential. MPhA staff have embraced the additional important work and the renewed purpose that comes with it.

From the staff team at MPhA – THANK YOU – thank you for your dedication to all those you work with and serve. ●

Aliyah N. Horton, CAE
Executive Director

CONGRATULATIONS
2020 SCHOLARSHIP WINNERS

Pharmacists Mutual is proud to support students who are interested in serving in an independent or small chain community pharmacy or an underserved geographic or cultural community. Each student listed received a $2,500 scholarship.

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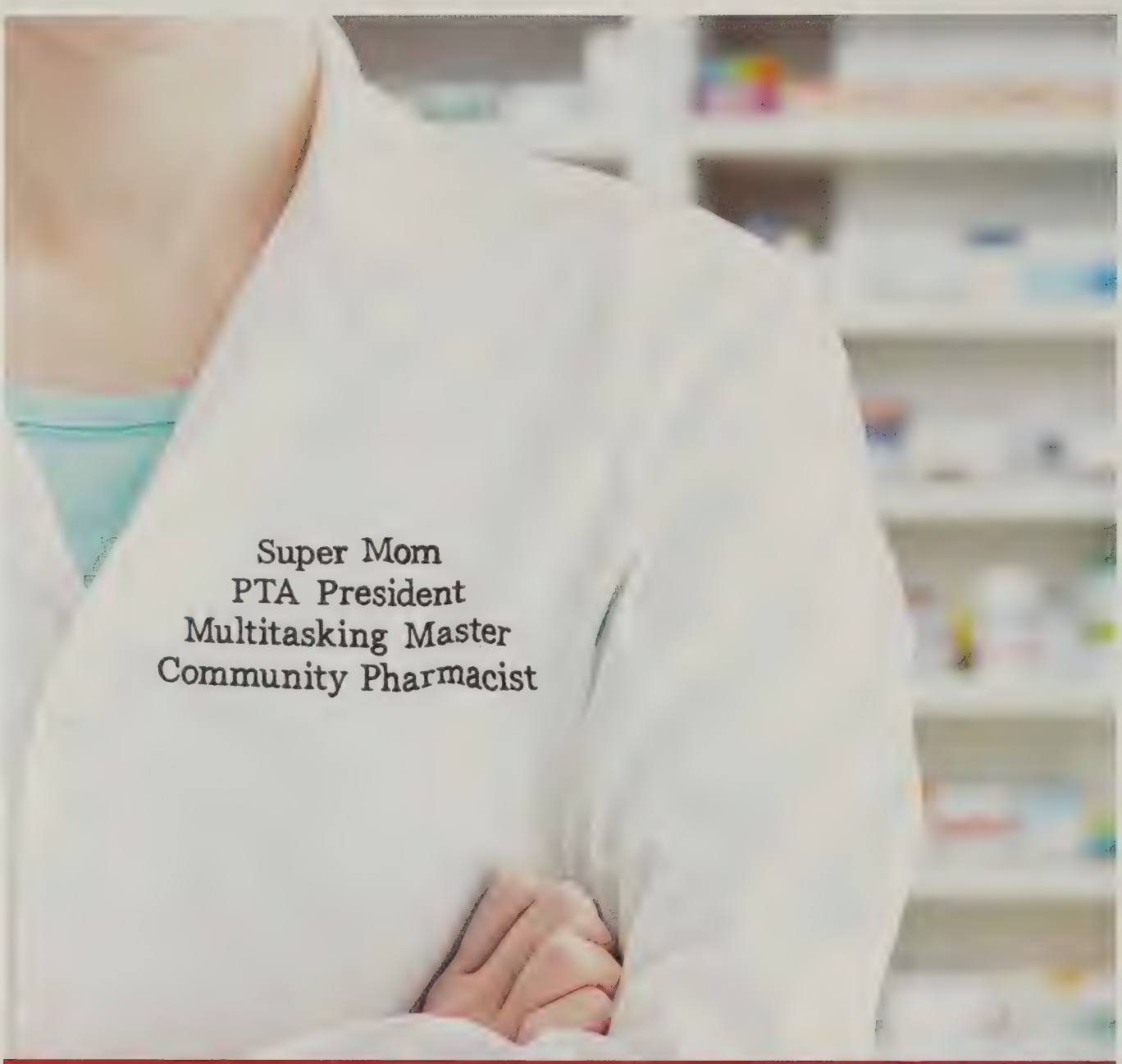

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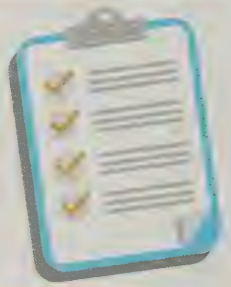

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Special thanks to Graphtech, Advertising Sales and Design

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President's Pad

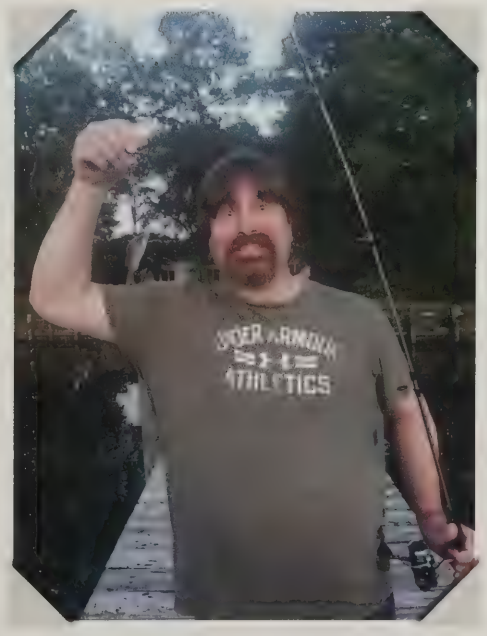
It has been an interesting year filled with new experiences and varied responses. Recently I've been doing a bit of fishing. Casting out, reeling in, selecting the hook, lure, and bait, have all been new activities for me. I'm intrigued by the analogy between fishing and what is going on in the world of pharmacy. Many times, you cast out a line and reel in nothing: changing the lure or location can make all the difference. As a profession, we've been casting out lots of lines, but how many are coming back with the big fish on them? What lure are you changing? Are you moving directions?

Clearly, COVID-19 has changed some things about the way we operate pharmacy, as has the spotlight on inequities, but are we making adjustments to practice that are most similar to what we've done before, or are we casting in a different direction in search of the big fish? There have been lots of changes that are forced upon us to operate safely, but these can also be seen as opportunities to practice differently, to gain the new customer, align with another practitioner, or even partner with a new system.

I'm still concerned about what COVID-19 and inequality means for myself, my family, my friends, my students, and my profession. However, I'm also fishing for some new solutions and opportunities in patient care to help level the field and keep people living healthy.

Stay safe,

Richard DeBenedetto, PharmD, MS, AAHIVP
MPhA President 2020-2021



> I'm intrigued by the analogy between fishing and what is going on in the world of pharmacy. Many times, you cast out a line and reel in nothing: changing the lure or location can make all the difference. What lure are you changing? Are you moving directions?

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Congratulations

MPhA would like to extend our congratulations to Magaly Rodriguez DeBittner for being elected to a second term on the APhA Board of Directors! ●

Thank You to Our 2019–2020 Group of APPE Rotation Students

We appreciate all the work they put in and hope that they learned something along the way! Best wishes as they continue into practice.

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MPhA webinar

WITH SPEAKER COURTNEY M. SUGGS, PHARMD, MPH, FDA

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SEPTEMBER 9, 2020

6:00 P.M. - 7:00 P.M.

Board of Trustees Meetings

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November 19, 2020
January 21, 2021
March 18, 2021
May 20, 2021

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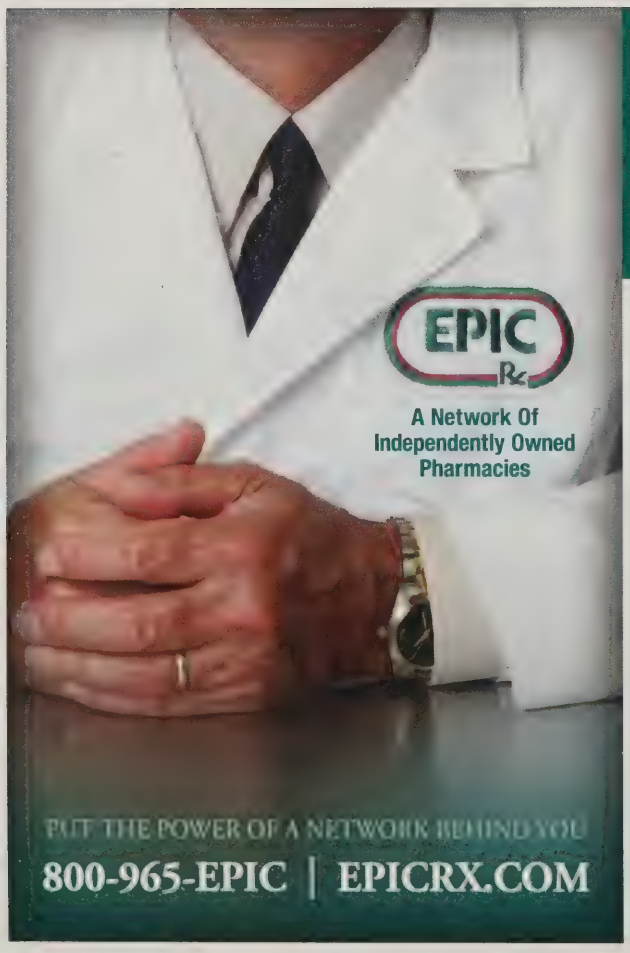

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MPhA Week Updates

Thank you all for participating in MPhA Week! From June 20–26, 2020 we had a lot of fun celebrating you and the work YOU all do to better the profession and pharmacy community in Maryland. We held the MPhA House of Delegates, the MPhA Foundation Annual Report, recognized awards winners and gave out prizes for participation! Give yourselves a virtual round of applause!

Policies Passed by the MPhA 2020 House of Delegates

Non-Pharmacy Business Names

MPhA will solicit the assistance of the Maryland Board of Pharmacy to pursue legislation, or work with a state regulatory agency with jurisdiction and enforcement power in this matter, to prohibit new businesses from using names such as "pharmacy," "apothecary," "medicine shop," and phonetic equivalents if they are ineligible for pharmacy permits

Pharmacists Role in COVID-19 Response

MPhA supports and encourages its members and all pharmacists, student pharmacists, and pharmacy technicians to be knowledgeable about their role in COVID-19 prevention, screening, testing and management and be prepared to respond to local community needs to reduce the spread of COVID-19.

Pharmacist Qualifications for Federal Positions

- MPhA supports the Bachelor of Science (BSP) degree and relevant experience as appropriate for meeting federal pharmacist position eligibility requirements
- MPhA opposes the requirement of a specific degree by employers without consideration of relevant work experience for employment and promotion policies.

Diversity, Equity and Inclusion

MPhA values and recognizes the importance of diversity, equity and inclusion. This includes welcoming, supporting and engaging all individuals, including but not limited to all races, ethnicities, religions, national origins, mental or physical abilities, ages, gender identities or expressions and sexual orientations. We encourage efforts to bring change to the workplace, the healthcare system, and social determinants of health to reduce inequities.

Cannabis Counseling

MPhA supports the inclusion of counseling on cannabis and its products, including CBD and other hemp derivatives, into the pharmacy standard of practice for liability coverage purposes, whether conducted in a medical cannabis dispensary or any other setting.

MPhA Week Updates *continued*

MPhA Excellence in Pharmacy Awards

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Seidman Distinguished Achievement

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Distinguished Young Pharmacist

Megan Ehret
Excellence in Innovation

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Bowl of Hygeia

Elodie Tendoh
Outstanding Student Pharmacist
University of Maryland-Baltimore

Mamta Parikh
Mentor of the Year

Jackie Phan
Outstanding Student Pharmacist
University of Maryland Eastern Shore

2019–2020 MPhA House of Delegates Updates

Congratulations to **SALEY TRAORE** on her election to Vice Speaker for 2020–2021!

Congratulations

to the Winners of the OTC Jeopardy Challenge

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Editorial

My Journey to Community Pharmacy Residency

By: Alexander Le, PharmD Candidate 2020 and Deanna Tran, PharmD, BCACP, Assistant Professor, Department of Pharmacy Practice and Science, University of Maryland School of Pharmacy

Disclosure: Nothing to disclose

The pharmacist's role has continued to evolve from being product-focused to patient-centered focused. This has been partly due to necessity and increased recognition of pharmacists as healthcare providers. The growing shortage of physicians has also helped to propel pharmacists to provide more patient services.[1] Ninety-two percent of Americans live within a five-mile radius of a community pharmacy, making community pharmacists one of the most accessible healthcare providers.[2] As a student pharmacist, I wondered if I was prepared to fill those big shoes of being a community pharmacist, in light of the growing responsibilities and scope of practice. This helped me realize that pursuing a community pharmacy residency would help me prepare for that role.

Beyond the traditional role of filling and counseling on prescriptions and over-the-counter medications, community pharmacists in every state can administer immunizations, a service that pharmacists in only nine states could provide in 1995.[3] Medication therapy management (MTM) is another service; the pharmacist reviews current medications and creates action plans with patients and their providers to ensure the best therapeutic outcomes.[4] MTMs have been beneficial for patients with many chronic conditions who struggle with understanding their conditions and keeping track of their extensive list of medications. Other patient care services that community pharmacists may participate in include point-of-care testing (POCT), where pharmacists screen patients for various health conditions such as blood glucose and A1C for diabetes, INR for anticoagulation management, and HIV screenings. In 10 states (including Maryland), community pharmacists have been given limited prescribing authority for hormonal contraceptives.[5,6] Community pharmacies have also implemented transitions-of-care programs to promote continuity in patient care from one care setting to another (i.e. hospital to home care).

All these services allow community pharmacists to identify and/or improve health outcomes and can prevent patients from unnecessary hospital admissions. Before entering the University of Maryland for pharmacy school, my knowledge on community pharmacy (and pharmacy in general) was limited; I just wanted to be in a position to help patients. My work as an undergraduate chemistry tutor made me realize I enjoyed breaking down difficult concepts to students on a more personal level. I wanted to find a pharmacy pathway that allowed me to work with patients on a similar level. Pharmacy school exposed me to the expanding pharmacist scope of practice and the expanding roles pharmacists could play in patients' health. On my community and ambulatory care rotations, I had many opportunities to provide patient education and services such as immunizations and INR testing. The ability to assist patients in taking control of their health gave me the rewarding feeling I felt when I was a chemistry tutor. I knew from my rotation experiences that community pharmacy was the path I wanted to take.

To be an effective community pharmacist, I decided pursuing a community pharmacy residency was necessary. I felt I needed more clinical training under more experienced community pharmacists if I wanted to provide the best care. My clinical rotations allowed me to find my passion in serving the outpatient setting. But having 10 weeks total for two outpatient rotations was not enough for me to comfortably say "I can perform the tasks proficiently like my preceptors can." The amount of opportunities community pharmacists have is endless, and I had not touched on all of them. Community residency offers different learning experiences such as pharmacy research, transitions of care, home care, public health, managed care, teaching, specialty pharmacy, and emergency preparedness.[7] Community residency also provides opportunities to develop leadership and management skills to become an effective leader in the pharmacy. These will help any potential resident become a more well-rounded community pharmacist, while opening the door for different career paths within the community setting.

There are many factors that must be considered when choosing a community residency program. The practice site(s) is one of them; the pharmacy could be at an independent, grocery store chain, outpatient clinic, specialty, or traditional retail pharmacy setting. The sites offer their own unique experiences, depending on the target population they serve and the services offered. Many of these sites are typically affiliated with a pharmacy school, a consideration for prospective residents with an interest in academia. Fit is another critical factor; a resident needs to feel comfortable working with the same group of pharmacists and other staff members for one year.

Researching each program and attending the residency showcases (if available) can give prospective residents a

Continued on page 26

Congratulations Graduates!

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Continuing Ed

Medication and Immunization Reconciliation During Transitions of Care for Older Adults

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Learning Objectives

By the conclusion of the reading, the pharmacist and pharmacy technician should be able to do the following based on a patient case:

1. Describe the impact of Medication Reconciliation during Transitions of Care in older adults
2. Identify at least three ways that pharmacists and pharmacy technicians can improve medication safety in older adults
3. Discuss the role of pharmacists and pharmacy technicians in conducting an immunization reconciliation

Keywords

Medication Reconciliation, Medication Safety, Transitions of Care, Older Adults, Immunizations

Background

Transitions of care provide an opportunity to address the medication related needs of older adults but it is also fraught with many challenges. Patient safety is jeopardized during a transition of care due to the risk of medication errors and discrepancies.[1] Medication changes can occur during admission, inpatient stay and/or at discharge. As such, it is imperative that the interprofessional team collaborates and actively seek out opportunities for medication reconciliation.[2] The inherent risks of an improper medication reconciliation can include potential rehospitalization and medication errors.[3] To help mitigate the potential medication related harm that could result from transitions of care and to ensure patient safety, an accurate and complete medication reconciliation and immunization history is necessary.

Proper medication reconciliation during transition of care helps avoid drug interactions, duplications or omission of medications. An assessment of medication reconciliation performed within 24 hours of admission to a long-term care facility from a hospital noted the unintentional omission of analgesic, cardiovascular, and psychiatric medications.[4] The involvement of a pharmacist transition coordinator when discharging older adults from hospital to long-term care facilities was shown to improve health outcomes.[5] Furthermore, with timely medication reconciliation, cases of inappropriate polypharmacy can also be identified and actions taken to deprescribe these medications. The intent of this article is to highlight opportunities and resources for pharmacists and pharmacy technicians in reconciling medications and immunizations to minimize errors and risks for older adults.

Medication Reconciliation

Medication reconciliation often labeled as "med rec" is one of the first steps of a comprehensive medication review (CMR). National organizations such as the American Pharmacists Association (APhA) and the American Society of Health-System Pharmacists (ASHP) have defined it as "the comprehensive evaluation of

a patient's medication regimen any time there is a change in therapy in an effort to avoid medication errors such as omissions, duplications, dosing errors, or drug interactions, as well as to observe compliance and adherence patterns."[6] Alternatively, the Institute for Healthcare Improvement (IHI) defines it as "the process of creating a complete and accurate list of a patient's medication regimen at each transition of care point by comparing the regimen prior to admission to the new setting of care to the orders at the new setting of care and determining the correct medications at the transitions point.[7]

While medication reconciliation can be seen as merely comparing two or more lists of medications, a comprehensive medication review includes a much deeper approach in which a health care provider partners with an identified patient, family member of the patient or caregiver is/are interviewed about his/her medications to obtain a comprehensive history including a medication list. The list is then verified with at least one other reliable source of medication information to produce a best possible medication history (BPMH) (Appendix 1) to ensure accurate and complete transfer at interfaces of care. Once medication reconciliation has been completed, a thorough assessment and comprehensive review ensues. Ultimately, a prioritized list of issues is compiled to be addressed either with other providers, the patient or both.

Pharmacists with the support of pharmacy technicians are well poised to conduct this vital clinical service and integrate this into the clinical care of older adults. For instance, community pharmacists have shown positive outcomes in transitions of care by providing medication therapy management (MTM) programs such as a CMR. By performing a CMR, they identify medication related problems (MRPs), provide counseling and medication education, and make recommendations to the prescriber when necessary.[8] In the inpatient setting, pharmacy technicians can assists pharmacists by obtaining preadmission medication history, relevant patient information from outpatient pharmacies and health care providers and use a standardized form to ensure proper documentation of the compiled medication list.[9]

A patient's risk of experiencing MRPs, in any setting or in transitions between care settings, increases with the number of medicines (polypharmacy); high-risk medications; or in the presence of multiple chronic conditions (such as renal impairment). Older adults, unfortunately, make up a greater number of these patients. In one study, 150 patients were evaluated for discrepancies of medication reconciliation at hospital discharge, 62 patients (41.3%) had at least one actual unintentional medication discrepancy and 83 patients (55.3%) had at least one potential unintentional discrepancy. Medication discrepancies are unexplained differences among regimens across different sites of care. For example, introducing a proton pump inhibitor to a patient's regimen while in the hospital and continuing it after discharge when there is no longer an indication for it can constitute a discrepancy. This discrepancy can lead to either short-term harm or long-term adverse reactions. An actual unintentional discrepancy is one that was inadvertently made by the prescriber to add, change, or omit a medication. Potential unintentional discrepancies occurred when clear patient directions regarding the management of home medications were omitted or not explicitly documented on patient discharge.[10] In one quality improvement initiative at a nursing home, the five most common identified MRPs were incorrect indication (21%), no monitoring parameters (17%), medication name omitted (11%), incorrect dose (10%), and incorrect frequency (8%).[11] (Table 1). One way to minimize medication discrepancies and improve patient safety in older adults is to utilize the action steps below. (Table 2).

Of note, the Centers for Medicare and Medicaid Services (CMS) requires consultant pharmacists to conduct a medication regimen review (MRR) at least monthly for residents in skilled nursing facilities (SNFs). Performing MRRs allows pharmacists to play an essential role within nursing facilities to identify and resolve MRPs. Pharmacists can also ensure that after transitioning from a SNF or nursing home (NH), patients have a scheduled follow-up appointment in the outpatient setting, therefore promoting continuity of care.[13] These actions can help reduce inappropriate expenditure on healthcare services for older adults and decrease health care utilization cost.[14]

Table 1: Common Medication Discrepancies found in the Nursing Home

Discrepancy	Example
Incorrect Indication (21%)	Drug class name is written
No monitoring parameters (17%)	Particularly with anti-hypertensives
Medication name omitted (11%)	Medication was not included on Medication Administration Record (MAR)
Incorrect dose (10%)	Transcription error where previous dose is recorded
Incorrect frequency (8%)	Transcription error where previous frequency is recorded

Table 2: Action Steps to Improve Medication Safety in Older Adults	
Step	**Rationale**
1. Identify older adults who have multiple comorbid conditions, those who take multiple or high-risk medications (e.g. American Geriatrics Society 2019 Beers Criteria) and those with low health literacy.	These are flags for older adults that may be at greatest risk.
2. Assess for Medication Appropriateness by asking the following:[12] • Is there an indication for the drug? • Is the medication effective for the condition? • Is the dosage correct? • Are the directions correct? Are they practical? • Are there any clinically significant drug-drug interactions? • Are there any clinically significant drug-disease interactions? • Is there unnecessary duplication with other drugs? • Is the duration of therapy acceptable? • Is the drug the least expensive alternate compared with others of equal effectiveness?	Assessing medications for appropriateness during medication reconciliation will reduce the risk of harm to the older adult.
3. Provide patients with accurate medication list and medication information.	This will help avoid reconciliation errors upon transitions of care, such as failure to match each medication with an appropriate indication, or unintentionally discontinuing patients' chronic medications.
4. Document what service performed ideally as part of the care plan, health information exchange and/or electronic health record.	By integrating the information into the patient's plan of care will reduce the potential for confusion as well as errors.

Reconciling Immunizations during Transitions in Care

Obtaining a thorough vaccination history is a critical part of the medication reconciliation process. Older adults are not only at greater risk for MRPs, but also for infections. The COVID-19 pandemic has highlighted the vulnerability of older adults in care transitions as well as in those residing in long-term care facilities. Vaccines reduce the risk of infection and provide protection from diseases that can be dangerous. It is therefore necessary that, during care transitions, providers should assess understanding of vaccines, accurately communicate the benefits or importance of vaccinations and make sure that older adults stay up to date on their vaccines. (Table 3).

Oftentimes older adults are unsure of what vaccinations they have previously received and end up repeating vaccines. A vaccination record provides a history of all the vaccines a patient has received. Some health care facilities maintain patients' vaccination records in an Electronic Health Record (EHR) which may be accessible to certain community pharmacists. This access may not exist for all pharmacists. Therefore, it is paramount that the facility's consultant pharmacist collaborates with the other providers and third party, local hospitals, primary care offices, to identify eligible older adults and assist in providing immunizations.[8] The Maryland Immunization Information System (IIS) is ImmuNet. Maryland law requires that all health care providers report data about each vaccine administered to the State of Maryland's patients via ImmuNet which acts as a connection between multiple providers. Pharmacists are able to access patients' vaccination history from the IIS using a technology interface and can create an account by going to www.mdimmunet.org.

In addition to reconciling the vaccination list, pharmacists also need to determine the appropriateness of the vaccine. To do this, the pharmacy technician, with the supervision of the pharmacist, can help in obtaining information from the patient, checking immunization record and/or contacting other healthcare providers. Pharmacy technicians can also perform patient care calls to remind the patient of an upcoming vaccination schedule, for example, when the second dose of herpes zoster vaccination is due. Immunizing pharmacists follow their clinical judgment informed by the recommendations and immunization schedules provided by the Advisory Committee on Immunization Practices (ACIP) and the Centers for Disease Control and Prevention (CDC). Most community-based pharmacists provide vaccinations without an appointment and require almost no wait.[15]

Of all the vaccines, influenza and pneumococcal tend to be the most commonly administered.[16] The CDC has long recommended that in order to acquire the best protection against all strains of bacteria that cause pneumonia, all adults 65 years and older should receive two pneumococcal vaccines: the pneumococcal conjugate vaccine (PCV13 or Prevnar® 13) followed by the pneumococcal polysaccharide vaccine (PPSV23 or Pneumovax®) at a later visit. On August 13, 2014, the ACIP recommended to vaccinate all adults 65 years and older with both PCV13 and PPSV23. However, from the June 2019 meeting, the committee now recommends that all adults 65 years and older should just receive a dose of PPSV23. Additionally, ACIP advises clinicians to engage in shared decision-making for adults 65 years and older who do not have an immunocompromising condition (e.g. asplenia, cochlear implant) and who have not received PCV13 to determine whether PCV13 should be given in addition to PPSV23.[17] Though the pneumococcal schedule may seem complex and very

Table 3: Highlighted Recommended Vaccines for Older Adults

Vaccines	Abbreviation	Trade Name	Administration	Schedule	Notes
Influenza	IIV, IIV3	Fluad® Fluzone® HD	0.5 mL IM	1 dose annually	Usually given before the flu season (Fall)
Pneumococcal 13-valent conjugate vaccine	PCV13	Prevnar® 13	0.5 mL IM	1 time dose	Shared clinical decision making for 65 years
Pneumococcal 23-polysaccharide vaccine	PPSV23	Pneumovax® 23	0.5 mL IM or SubQ	1 time dose	Indicated before 65 years old for patients with diabetes
Hepatitis A vaccine	HepA	Havrix®	1 mL IM	2 doses	6 to 12 months apart
		Vaqta®	1 mL IM	2 doses	6 to 18 months apart
Hepatitis B vaccine	HepB	Engerix-B®	1 mL IM	3 doses	A series of 3 doses on a 0-, 1-, 6-month schedule
		Recombivax HB®	1 mL IM	3 doses	A series of 3 doses on a 0-, 1-, 6-month schedule
		Heplisav-B®	0.5 mL IM	2 doses	1 month apart
Tetanus, diphtheria, pertussis vaccine	Td or Tdap	Adacel® Boostrix®	0.5 mL IM	1 dose every 10 years	If previously did not receive Tdap: 1 dose Tdap, then Td or Tdap every 10 years
Zoster vaccine, recombinant	RZV	Shingrix®	0.5 mL IM	2 doses	50 years; 2 doses at 0 and 2 to 6 months
OR					
Zoster vaccine live	ZVL	Zostavax®	0.5mL SubQ	1 time dose	60 years; Not preferred – less effective

- Age 65 years and older (immunocompetent): 1 dose PCV13 based on shared clinical decision-making
  - If both PCV13 and PPSV23 are to be administered, PCV13 should be administered first
  - PCV13 and PPSV23 should be administered at least 1 year apart.
  - If PPSV23 was administered prior to age 65 years, administer 1 dose PPSV23 at least 5 years after previous dose
- Regardless of previous herpes zoster or history of ZVL (Zostavax®) vaccination, administer RZV (Shingrix®) at least 2 months after ZVL, then, the second dose of RZV 2 to 6 months later.
- IM – Intramuscular, SubQ – Subcutaneous

***For detailed information on vaccine schedules, visit www.cdc.gov**

***For detailed information on each vaccine, visit www.fda.gov**

Table 4: Resources to Assist with Medication and Vaccine Reconciliation and Safety		
Name of the Resource	**What it addresses**	**Website**
Help with My Meds	Provides handouts, videos and a list of senior care pharmacists to address medication related problems	www.HelpWithMyMeds.org
PSNet — Patient Safety Network	Provides tools, journal articles and cases to help practitioners address medication safety issues such as medication reconciliation	https://psnet.ahrq.gov/primer/medication-reconciliation
HealthInAging	Provides information for older adults such as the Essential Vaccination Information Guide	https://www.healthinaging.org

confusing, because many changes have been made over a short period of time, this updated recommendation as well as the COVID-19 pandemic provide pharmacists and pharmacy technicians a talking point about the importance of vaccinations. Furthermore, overcoming these misunderstandings and misconceptions will help in ensuring patient safety.

Conclusion

Ensuring adequate medication reconciliation during transitions of care requires a team effort.[18] Medication and vaccine information must be effectively communicated during discharge between providers for continuity of care. Pharmacists must collaborate with the interdisciplinary team to review medication changes throughout transitions of care and encourage older adults, family members, and caregivers to be involved with the medication reconciliation process as active members of the health care team. Providing discharge counseling, targeting barriers to adherence, and ensuring a proper handover of medication information including rationale for medication changes to outpatient providers will improve the chances of a safe transition. (Table 4)

REFERENCES

1. Coleman EA, Berenson RA. Lost in transition: challenges and opportunities for improving the quality of transitional care. *Ann Intern Med*. 2004;141(7):533–536. doi:10.7326/0003-4819-141-7-200410050-00009
2. Pincus K. Transitional Care Management Services: Optimizing Medication Reconciliation to Improve the Care of Older Adults. *J Gerontol Nurs*. 2013;39(10) 10-15. doi: 10.3928/00989134-20130827-03
3. American College of Clinical Pharmacy, Kirwin J, Canales AE, et al. Process indicators of quality clinical pharmacy services during transitions of care. *Pharmacotherapy*. 2012;32(11):e338–e347. doi:10.1002/phar.1214
4. Kirke C, Ali L, Alshammari T, et al. Medication Safety in Transitions of Care. Geneva: World Health Organization. Who.int. https://www.who.int/patientsafety/medication-safety/TransitionOfCare.pdf?ua=1. Published 2019. Accessed May 26, 2020.
5. Anathhanam S, Powis RA, Cracknell AL, Robson J. Impact of prescribed medications on patient safety in older people. *Ther Adv Drug Saf*. 2012;3(4):165–174. doi:10.1177/2042098612443848
6. Johnson A, Guirguis E, Grace Y. Preventing medication errors in transitions of care: A patient case approach. *J Am Pharm Assoc*. 2015;55(2):e264–e276. doi:10.1331/JAPhA.2015.15509
7. Medication reconciliation to prevent adverse drug events | IHI - Institute for Healthcare Improvement. Ihi.org. http://www.ihi.org/topics/adesmedicationreconciliation/Pages/default.aspx Published 2017. Accessed February 2, 2020
8. Melody KT, McCartney E, Sen S, Duenas G. Optimizing care transitions: the role of the community pharmacist [published correction appears in Integr Pharm Res Pract. 2019 Jun 06;8:61]. *Integr Pharm Res Pract*. 2016;5:43–51. Published 2016 Apr 22. doi:10.2147/IPRP.S87947
9. Fabiilli NA, Powers MF. Roles for Pharmacy Technicians in Medication Reconciliation During Transitions of Care. *Journal of Pharmacy Technology*, 33(1), 3–7. (2017). doi:10.1177/8755122516680621
10. Wong JD, Bajcar JM, Wong GG, et al. Medication reconciliation at hospital discharge: evaluating discrepancies. *Ann Pharmacother*. 2008;42(10):1373–1379. doi:10.1345/aph.1L190
11. Tong M, Oh HY, Thomas J, Patel S, Hardesty JL, Brandt NJ. Nursing Home Medication Reconciliation: A Quality Improvement Initiative. *J Gerontol Nurs*. 2017;43(4):9–14. doi:10.3928/00989134-20170313-04
12. Hanlon JT, Schmader KE, Samsa GP, et al. A method for assessing drug therapy appropriateness. J Clin Epidemiol. 1992;45:1045-51
13. Sen S, Bowen JF, Ganetsky VS, et al. Pharmacists implementing transitions of care in inpatient, ambulatory and community practice settings [published correction appears in *Pharm Pract (Granada)*. 2014 Jul;12(3):508]. Pharm Pract (Granada). 2014;12(2):439.
14. Dalton K, Byrne S. Role of the pharmacist in reducing healthcare costs: current insights. *Integr Pharm Res Pract*. 2017;6:37–46. Published 2017 Jan 25. doi:10.2147/IPRP.S108047
15. Bach AT, Goad JA. The role of community pharmacy-based vaccination in the USA: current practice and future directions. *Integr Pharm Res Pract*. 2015;4:67–77. Published 2015 Jul 1. doi:10.2147/IPRP.S63822
16. Ventola CL. Immunization in the United States: Recommendations, Barriers, and Measures to Improve Compliance: Part 2: Adult Vaccinations. *P T*. 2016;41(8):492-506.
17. ACIP Vaccine Recommendations and Schedules | CDC. cdc.gov. https://www.cdc.gov/vaccines/acip/recommendations.html. Published 2019. Accessed February 2, 2020.
18. Mansour DZ, Sharma K, Brandt NJ. Understanding the Medication List and Addressing Polypharmacy in Older Adults. In: *Geriatric Practice*.; 2020. doi:10.1007/978-3-030-19625-7_16

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Appendix 1

Medication Reconciliation: A Learning Guide. Elentra.healthsci.queensu.ca. https://elentra.healthsci.queensu.ca/assets/modules/mr/appendix-3.html. Published 2009. Accessed July 2, 2020.

now!

Individual BPMH Record and Audit Tool

Use the results to complete the measurement worksheets

Implementation Stage:
☐ Baseline ☐ Early implementation ☐ Full implementation

Patient Sample:

Patient Identification

INSTRUCTIONS:

- ☐ A clinical pharmacist or designate compiles the Best Possible Medication History (BPMH) based on patient interview, medication vial review, patient medication list, community pharmacist, family physician, etc. .
- ☐ Compare the BPMH to all prescription medication ordered (AMOs) for this patient within the first 24 hours of the index hospital stay. This includes new medications.
- ☐ To complete the BPMH Discrepancy columns for each medication, check the appropriate box. Type 0= NO discrepancy, Type 1= Intentional discrepancy, Type 2= Undocumented Intentional Discrepancy, Type 3= Unintentional Discrepancy and comment as applicable
- ☐ Indicate for all Type 2 and Type 3 discrepancies whether they were resolved by placing a ✓ in the "Resolved" column.
- ☐ For all additional medications found during the BPMH process, and not captured on AMO, note "ADDITIONAL" at the end of the list, record medications and score discrepancies appropriately.

Best Possible Medication History (BPMH) Medication name, dose, route & frequency (prescription meds only)				No Discrepancy	Intentional Discrepancy	Undocumented Intentional Discrepancy	Unintentional Discrepancy	Resolved ✓	Discrepancy Comments
Medication	**Dose**	**Route**	**Frequency**	**0**	**1**	**2**	**3**		*Clarification of discrepancies should be recorded in Patient Record*
			BPMH Discrepancy Total						
			BPMH Discrepancy Type	**0**	**1**	**2**	**3**		

Type 1= Intentional discrepancy - physician has made an intentional choice to add, change or discontinue a medication and is clearly documented.
Type 2= Undocumented Intentional Discrepancy - physician has made an intentional choice to add, change or discontinue a medication but this choice is not clearly documented.
Type 3= Unintentional Discrepancy - physician unintentionally changed, added or omitted a medication the patient was taking prior to admission.

Case Questions

Mrs. MM is a pleasant 79-year-old African American lady who comes regularly to Better Life Pharmacy with her daughter C to pick up her medications. On 6/4/2020, MM brings a folder with a list of medication history and many prescriptions with a transfer summary from a local skilled nursing facility (SNF). MM states she left rehab today. She tells you that she had chest pain on 5/15/2020 while in the kitchen cooking and called 911. She was transferred to the hospital where she was diagnosed and treated for a MI. Six days later she was transferred to a SNF until today. Her vaccination history is unknown and her medication history at the pharmacy includes:

Medication	Directions	Quantity	Refills	Prescriber	Last date of fill
albuterol (Proair®) MDI	1 puff every 4 hours PO PRN for SOB	1	0	B. Joy, PA	5/7/2020
quetiapine 25 mg (Seroquel®) oral tablet	1 tab PO Q Day	90	0	J. Charity, DO	5/14/2020
acetaminophen 500mg (Tylenol®) oral tablet	1 tab PO q 6 hours	100	0	I. Love, PharmD	5/7/2020
atorvastatin 40 mg (Lipitor®) oral tablet	1 tab PO Q Day	90	0	B. Joy, PA	5/14/2020
amlodipine 10mg (Norvasc®) oral tablet	1 tab PO Q Day	90	0	B. Joy, PA	5/14/2020
cholecalciferol (Vitamin D3 1000 IU oral capsule)	1 cap PO Q Day	100	0	I. Love, PharmD	5/7/2020
divalproex sodium 125 mg (Depakote®) oral delayed release tablet	1 tab PO BID	120	0	J. Charity, DO	5/14/2020
levothyroxine 25 mcg (Levoxyl®) oral tablet	1 tab PO Q Day	90	0	B. Joy, PA	5/14/2020
melatonin 3 mg oral tablet	1 tab PO Q HS	100	0	I. Love, PharmD	5/7/2020
metformin 500 mg (Glucophage®) oral tablet	1 tab PO Q Day	90	0	J. Charity, DO	5/14/2020
metoprolol tartrate 50 mg (Lopressor®) oral tablet	1 tab PO BID	180	0	S. Heartfelt, MD	5/14/2020

Continued on next page

Transfer summary from rehab describes, diagnosis of NSTEMI and cardiomyopathy and electrolyte abnormalities during hospital stay. The medication list includes:

Medication	Directions	Quantity	Refills	Prescriber	Last date of fill
quetiapine 100 mg (Seroquel®) oral tablet	1 tab PO Q Day	30	0	C. Hope, DNP	6/4/2020
aspirin 81 mg Enteric Coated oral tablet	1 tab PO Q Day	30	0	C. Hope, DNP	6/4/2020
atorvastatin 40 mg (Lipitor®) oral tablet	1 tab, PO Q Day	30	0	C. Hope, DNP	6/4/2020
cholecalciferol 1000 IU (Vitamin D3) oral capsule	1 cap PO Q Day	30	0	C. Hope, DNP	6/4/2020
mirtazapine 7.5mg (Remeron®) oral tablet	1 tab PO Q Day	30	0	C. Hope, DNP	6/4/2020
divalproex sodium 125 mg (Depakote®) oral delayed release tablet	1 tab PO BID	60	0	C. Hope, DNP	6/4/2020
lisinopril 10mg (Zestril®) oral tablet	1 tab PO Q Day	30	0	C. Hope, DNP	6/4/2020
melatonin 5 mg oral tablet	1 tab PO Q HS	30	0	C. Hope, DNP	6/4/2020
metformin 500 mg (Glucophage®) oral tablet	1 tab PO BID	60	0	C. Hope, DNP	6/4/2020
metoprolol tartarate 50 mg (Lopressor®) oral tablet	1 tab, PO BID	60	0	C. Hope, DNP	6/4/2020
Spironolactone 25mg (Aldactone®) oral tablet	1 tab PO Q Day	30	0	C. Hope, DNP	6/4/2020

Lab Results (May 30, 2020)

Endocrinology
TSH: 1.310 uIU/mL

General Chemistry
Sodium Lvl: 141 mmol/L
Potassium Lvl: 4.5 mmol/L
Chloride: 106 mmol/L
CO2: 27 mmol/L
BUN: 8 mg/dL
Creatinine: 0.99 mg/dL
est. CrCl: 49.63 mL/min
Glucose Lvl Random: 138 mg/dL
Calcium Lvl: 8.7 mg/dL
Magnesium Lvl: 1.5 mg/dL
Phosphorus Lvl: 3.3 mg/dL
GFR African American: >60 mL/min/1.73 m2
Albumin Lvl: 2.8 gm/dL
A/G Ratio: 0.8
Bili Total: 0.8 mg/dL
Alk Phos: 122 units/L
Lactic Acid Lvl: 2.0 mmol/L
Ammonia Lvl: <10 umol/L

Hematology
WBC: 15.2 k/uL
Hgb: 9.7 gm/dL
Hct: 29.3 %
Platelet: 503 k/uL
MCV: 90.4 FL
MCH: 29.9 pg
MCHC: 33.1 gm/dL

Case Questions

1. **Which of the following situations constitutes a transition of care for Mrs. MM?**
   a) When she had an MI on 5/15/2020 and was taken by ambulance to the hospital
   b) When she was treated at the hospital and was transitioned into a rehab facility
   c) When the rehab facility handed her the "transition of care" folder
   d) All of the above

2. **By scanning her two lists of medications, what would be the best course of action with Mrs. MM today?**
   a) MM will benefit from an CMR appointment with the pharmacist
   b) Fill her many prescriptions as quickly as possible
   c) Her recent transition prescriptions include changes and call to the SNF is warranted
   d) MM still has medications at home and will need to use them up first before starting new prescriptions to save on copays

3. **At first glance of Mrs. MM's clinical picture, which of the following would be your concern about quetiapine:**
   a) Quetiapine raises concerns about QTC interval prolongation
   b) Dose is four times what she has been prescribed 2 weeks ago
   c) QTC interval is particularly significant in light of her recent myocardial infarction
   d) All the of the above

4. **In light of COVID-19, Mrs. MM's multiple chronic conditions and unknown vaccination history, which resource would be appropriate to gather vaccination history for Mrs. MM?**
   a) https://psnet.ahrq.gov/primer/medication-reconciliation
   b) https://www.healthinaging.org
   c) www.mdimmunet.org
   d) www.HelpWithMyMeds.org

5. **In ensuring vaccination reconciliation for older adults, the pharmacy technician can help do the following:**
   I. Interview patient and gather patient's history
   II. Place a reminder call to patient for second dose of Shingrix®
   III. Gather all necessary tools, e.g. syringe, cotton, Band Aid®, etc. and prepare the environment and the patient to be given the vaccine by the pharmacist
   IV. Hand the patient information about the vaccine administered
   a. I and II
   b. I and III
   c. I, II, and IV
   d. I, II, III, and IV

Continued on next page

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Case Answers

1. **Answer D.**
Regardless of the reason of admission and/or the means of transfer to the hospital, it is considered a transition of care between home and hospital [A, B, C are correct]. A transfer from hospital to subacute or rehab is considered a transition of care. Typically, the patient is handed a list of their current medications, prescriptions and information about their conditions and medications to be taken to their pharmacy while transitioning to home. It is always helpful that the pharmacy staff asks for the summary as a tool for medication reconciliation. In conclusion, all of the abovementioned situations are considered transitions of care and lend themselves as moments of opportunity for medication reconciliation. [D is correct].

2. **Answer A.**
MM needs to schedule a face-to-face appointment with pharmacist because there are multiple changes to the medication list that could potentially precipitate a medication related problem if not taken as intended. A CMR appointment will also help prioritize a problem list [Answer A is correct]. While there is a need to have her many prescriptions filled as safely and as quickly as possible. This statement may be incomplete. There is a growing responsibility to successfully perform a medication reconciliation with the community pharmacy in light of evidence supporting better outcomes. [B is incorrect]. While calling the skilled nursing facility may clarify minor clarifications, it may not be the most time nor outcome-based strategy. It may be easier to get in touch with primary care for future interventions. [C is incorrect]. Advising older adults to take pre-transition doses of medications can only create confusion and can contribute to a re-hospitalization. A medication take-back program or sending old medications for disposal may be a better option. [D is incorrect].

3. **Answer D.**
Quetiapine has been associated with higher risk for adverse drug reactions including c QTC prolongation. This is especially important in light of Mrs. MM recent hospitalization for MI, bearing in mind all the possible EKG changes associated such ST elevation and others. Therefore, [D is correct].

4. **Answer C.**
While the following websites https://psnet.ahrq.gov/primer/medication-reconciliation, https://www.healthinaging.org, www.HelpWithMyMeds.org can serve as great resources for medication reconciliation; www.mdimmunet.org is the only website that contains patient specific data with respect to vaccination. [C is correct and A, B and D are incorrect].

5. **Answer D.**
Pharmacy technicians play a vital role in patient care. They can assist in gathering vaccination history from the patient, pull-up medication fill history from pharmacy electronic records and help prepare the aseptic environment and tools for patient to receive their vaccinations. e.g. syringe, cotton, alcohol swabs, etc. They also can play a vital role in placing reminder call to patients who are due for a second or third dose of a vaccine as well as prepare educational material for them. [D is correct].

CONTINUING EDUCATION QUIZ

Note: Instructions for obtaining your CE has changed. Please contact MPhA Headquarters if you have any questions.

The Virginia Pharmacists Association is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education.

MPhA Members may retrieve FREE CE for this article up to one year after the program release date.

Initial Release Date: 8/5/2020

Planned Expiration Date: 8/5/2021

This program provides for one contact hour (0.1 CEU) of continuing education credit. **Universal Activity Number** (UAN) is:

0278-0000-035-H06-P/T

The authors have no financial disclosures to report.

This program is Knowledge Based — acquiring factual knowledge that is based on evidence as accepted in the literature by the health care professionals.

Directions for taking this issue's quiz:
To receive CE credit for this activity, participants must read the article in its entirety, complete an evaluation survey on the activity, and earn a grade of 70% or higher on a short exam.

This issue's quiz on **Medication and Immunication Reconcililation During Transitions of Care for Older Adults** can be found online at:

For pharmacists and pharmacy technicians:
https://www.lecturepanda.com/a/MarylandRx

(1) Enter your name and contact information.

(2) Take the quiz and click "Complete Quiz."

My Journey to Community Pharmacy Residency Continued from page 13

better grasp of the expectations and work environment. The residency showcases proved beneficial for me because I could learn about the program offerings and expectations directly from the residency program directors and the current residents. As I went on interviews for a few community residency programs, I shared my list of goals with my interviewers and residents. I needed to see if I would have the support and resources to achieve my goals. These considerations helped me narrow down my list of community residency programs to apply for and match with one that would best align with my future plans.

As I prepare my transition from pharmacy student to community pharmacy resident, I am aware that community pharmacy will continue to evolve to address more patient needs that yet have been identified. Community pharmacy residency programs put residents in a position to develop innovative ideas to implement in community practice. With this residency, I feel I will be in a better position to provide the best patient care. It is exciting to finally be out of school and practicing as a full-fledged pharmacist, while receiving additional training. I have some big shoes to fill, and I am looking forward to what community pharmacy residency has in store for me.

For more resources on community pharmacy residency, check out these sites: Information on Community Pharmacy Residency Programs: https://www.pharmacist.com/sites/default/files/files/Residency-schools.pdf

ASHP PGY1 Community-based Pharmacy Residency Competencies and Objectives: https://www.ashp.org/-/media/assets/professional-development/residencies/docs/pgy1-ashp-apha-newly-approved-community-based-pharmacy-residencies-2016 ●

REFERENCES

1. Goode JV, Owen J, Page A, Gatewood S. Community-Based Pharmacy Practice Innovation and the Role of the Community-Based Pharmacist Practitioner in the United States. *Pharmacy (Basel).* 2019 Sep; 7(3): 106.
2. Newman TV, Hernandez I, Keyser D, San-Juan-Rodriguez A, Swart ECS, Shrank WH, Parekh N. Optimizing the Role of Community Pharmacists in Managing the Health of Populations: Barriers, Facilitators, and Policy Recommendations. *J Manag Care Spec Pharm.* 2019 Sep;25(9):995-1000.
3. Weaver KK: Pharmacist-administered immunizations: What does your state allow? American Pharmacists Association. https://www.pharmacist.com/article/pharmacist-administered-immunizations-what-does-your-state-allow. Updated October 1, 2015. Accessed April 10, 2020.
4. Community Pharmacists and Medication Therapy Management. Centers for Disease Control and Prevention. https://www.cdc.gov/dhdsp/pubs/guides/best-practices/pharmacist-mtm.htm. Updated May 30, 2019. Accessed April 9, 2020.
5. Pharmacist Prescribing: Hormonal Contraceptives. National Alliance of State Pharmacy Associations. https://naspa.us/resource/contraceptives/. Updated May 24, 2019. Accessed April 18, 2020.
6. Md. Code Regs. 10.34.40 (2018)
7. Guidance Document for the Accreditation Standard For Postgraduate Year One (PGY1) Community-Based Pharmacy Residency Programs. American Society of Health-System Pharmacists. https://www.ashp.org/-/media/assets/professional-development/residencies/docs/ashp-apha-pgy1-community-based-standard-guidance.ashx. Updated March 2020. Accessed April 10, 2020.

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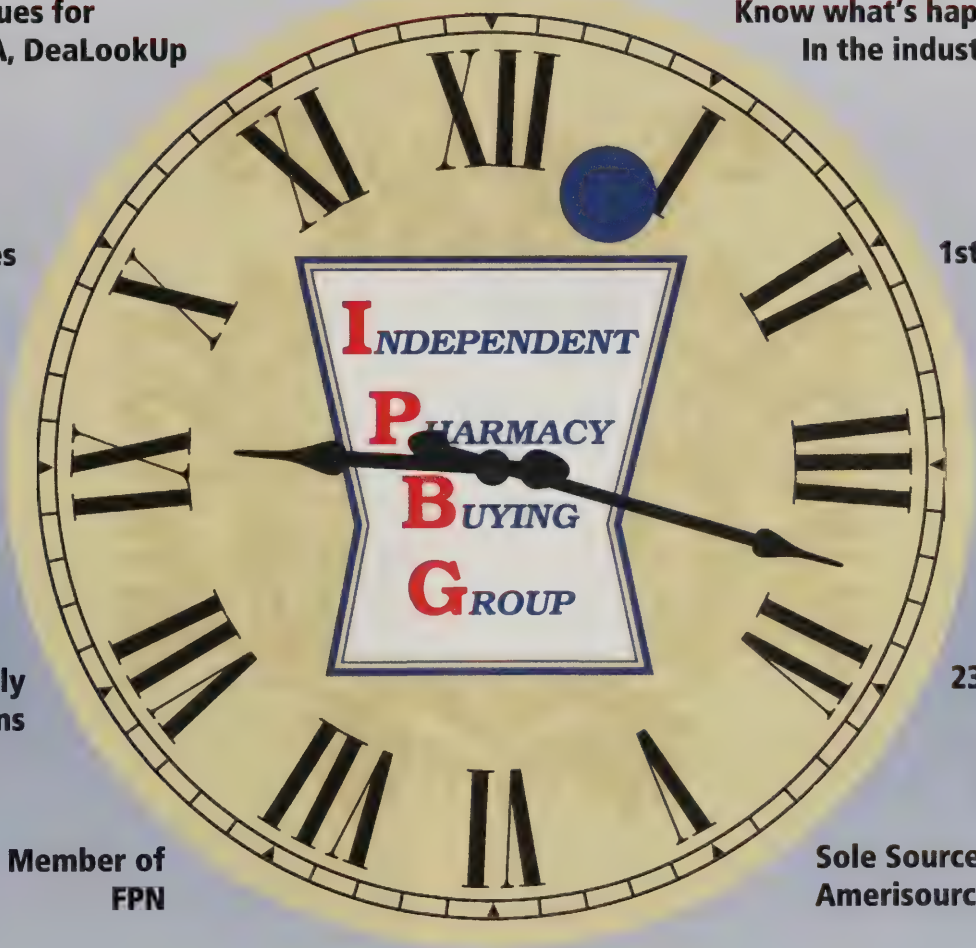

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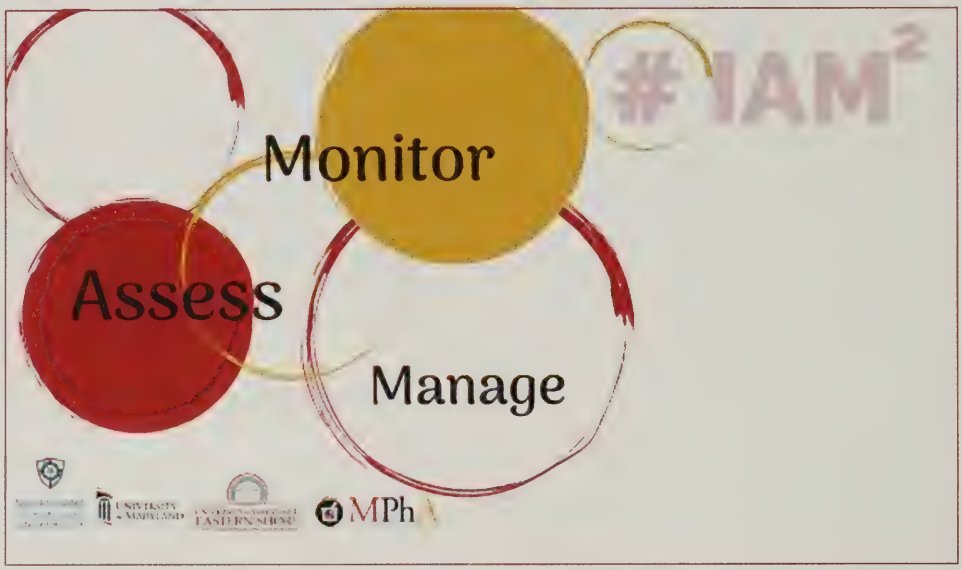
MPhA The PharmCast Podcast Episodes Focus on Sharing Knowledge and Building Collaborations

MPhA received a grant from the Cardinal Health Foundation to work on a number of initiatives to promote optimal prescribing for pain management by maximizing the CDC's pain management guidelines. The vision of our effort IAM2 (I Assess Monitor Manage or I am, too) strives to normalize the collaboration between pharmacists, prescribers and patients to ensure the safest use of opioids for pain management. Key components of the effort include :



Stakeholder Outreach, Collaboration & Engagement

- Social media, and stakeholder working groups and a pledge that will be launched during National Pain Awareness Month. Look out for #IAM2 on your social media feeds.

Education & Training

- CE that will be held jointly with pharmacists and prescribers

Working With the PDMP to Benchmark Data to Track Our Collective Efforts Related to Non-cancer Patients to:

- Reduce the percentage of prescriptions dispensed for opioids with an average daily dosage of ≥90 morphine milligram equivalents (MME) to patients 18 + written by prescribers in Anne Arundel County, MD; and to
- Reduce the percentage of individuals dispensed concurrent prescriptions of opioids and benzodiazepines for ≥30 cumulative days in Anne Arundel County.

We will continue to share information through the process. In this issue, we are highlighting two podcasts launched this summer that focus on the pharmacist's role in this effort as well as how we can build bridges between practitioner communities. The PharmCast is available on all podcast platforms. You can access any of those platforms via https://anchor.fm/ThePharmCast.

MPhA Podcast: The PharmCast Episodes

Episode 9: Don't Ignore Your Spidey Sense ... What's that Feeling — *Dr. Lynn McPherson, University of Maryland*

Community pharmacists have common sense — they apply their spidey sense all day long ... pharmacists are the last line of defense for protecting individual patients and society ... a huge responsibility. https://bit.ly/2BxYkuA

Episode 10: Communicating and Collaborating — Keep it Simple — *Rick Abbruzzese, RxALI MD*

What every community can do to make a difference ... what can you do? People can take charge in their own lives. https://bit.ly/2OVCwff

Editorial

National Pharmacy Organizations Unite to Take a Stand Against Racial Injustice

The recent deaths of George Floyd, Breonna Taylor, Ahmaud Arbery, and too many others have ignited strong emotions and continue to shed a glaring light on the day-to-day experiences of Black Americans. Sadly, racism and discrimination are a thread that has been woven into the fabric of this country for far too long.

Adding to the challenges of the global pandemic of COVID-19, which disproportionately impact communities of color, there is a greater public health crisis plaguing our country: racism and discrimination. People of color and other marginalized groups experience a continuum of systemic racism, discrimination, and injustices that result in ongoing health inequities created by numerous factors impacting social determinants of health.

As pharmacists, we took an oath that includes, as its first statement, "I will consider the welfare of humanity and relief of suffering my primary concerns." Humanity includes all people, and we have the responsibility in this country to care for those who are disproportionately suffering. As health care professionals, we are trained to provide the best care to all and to "advocate for change that improves patient care." Advocating against racism, all forms of discrimination and injustice can improve patient care. This is an urgent priority.

- We, as a profession, stand in unity to advocate for the dismantling of systems that have historically marginalized and oppressed Black Americans in this country.
- We stand and advocate against police brutality and law enforcement misconduct.
- We advocate for measures that eliminate inequities resulting from racism and discrimination in every facet of our profession, including patient care, pharmacist and pharmacy technician continuing education, student pharmacist education, workplace practices, pharmacy school admissions, leadership opportunities, and organizational policies.
- We advocate for health equity in marginalized communities to eliminate disproportionate health outcomes.

The time is now to engage in intentional dialogue and action. All forms of racism, discrimination, and injustice are unacceptable. We must all listen, learn, and collectively address this crisis directly. We encourage self and team accountability for upholding actions and social justice to bring forth peace and healing in our communities.

The profession of pharmacy, represented by the organizations signed onto this statement, will begin actions to ensure that the care provided by pharmacists and within pharmacies upholds the highest standards. These actions include but are not limited to —

1. Working together to provide opportunities to address health care disparities and strengthen affected communities.
2. Providing pharmacist, student pharmacist, and pharmacy technician education on social injustices and systematic challenges impacting health care.
3. Delivering strategies that focus on change through communications, partnerships, and solutions to address health care disparities.
4. Continuing dialogue among pharmacy organizations and stakeholders to identify and implement change.

Let us work together now to weave new threads that embrace our diversity, honor our humanity, and support people of color and any marginalized populations for the benefit and promotion of current and future generations.

Pharmacy Organizations Unite to Take a Stand Against Racial Injustice

National Pharmaceutical Association
American Pharmacists Association (APhA)
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National Alliance of State Pharmacy Associations
Hematology/Oncology Pharmacy Association (HOPA)
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American College of Clinical Pharmacy
American College of Apothecaries
Academy of Managed Care Pharmacy
College of Psychiatric and Neurologic Pharmacists
Accreditation Council for Pharmacy Education (ACPE)

Editorial

How Much Money Will You Need In Retirement?

Have you underestimated?

What is enough? If you're considering retiring in the near future, you've probably heard or read that you need about 70% of your end salary to live comfortably in retirement. This estimate is frequently repeated ... but that doesn't mean it is true for everyone. It may not be true for you. Consider the following factors:

Health. Most of us will face a major health problem at some point in our lives. Think, for a moment, about the costs of prescription medicines, and recurring treatment for chronic ailments. These costs can really take a bite out of retirement income, even with a great health care plan.

Heredity. If you come from a family where people frequently live into their 80s and 90s, you may live as long or longer. Imagine retiring at 55 and living to 95 or 100. You would need 40-45 years of steady retirement income.

Portfolio. Many people retire with investment portfolios they haven't reviewed in years, with asset allocations that may no longer be appropriate. New retirees sometimes carry too much risk in their portfolios, with the result being that the retirement income from their investments fluctuates wildly with the vagaries of the market. Other retirees are super-conservative investors: their portfolios are so risk-averse that they can't earn enough to keep up with even moderate inflation, and over time, they find they have less and less purchasing power.

Spending habits. Do you only spend 70% of your salary? Probably not. If you're like many Americans, you probably spend 90% or 95% of it. Will your spending habits change drastically once you retire? Again, probably not.

Will you have enough? When it comes to retirement income, a casual assumption may prove to be woefully inaccurate. You won't learn how much retirement income you'll need by reading this article. Consider meeting with a qualified financial professional who can help estimate your lifestyle needs and short-term and long-term expenses.

This series, Financial Forum, is presented by PRISM Wealth Advisors, LLC and your State Pharmacy Association through Pharmacy Marketing Group, Inc., a company dedicated to providing quality products and services to the pharmacy community.

Pat Reding and Bo Schnurr may be reached at 800-288-6669 or pbh@berthelrep.com.

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Executive Director's Message

"So many members have been working with me to impact pharmacist scope of practice, engagement in COVID-19 testing and other ways to support patients during this pandemic. We continue to push the Hogan administration and MDH, while also working with our national partners. Join us as we gear up for the 2021 legislative session."

A friend sent me a fun little book with interesting quotes to help keep some levity and perspective during these unsettling times. Every time I open the book I end up going to the same page. It says, " The only courage that matters is the kind that gets you from one moment to the next." The quote is from Minyon McLaughlin, whom I had to look up. Turns out she is a native of Baltimore and a graduate of Smith College (my alma mater).

These continue to be unprecedented times as the Carona Virus ebbs and flows through communities; many are awakening to the knowledge of the injustices that plague our country; and the spotlight is shining on others who are finally being seen. All of this carries so much weight, whether you are working in the pharmacy, a lab, a hospital or working from home. It's a lot, but the pharmacy community continues to courageously move from one moment to the next.

During these last few months, you've worked with us to navigate the changes that have impacted MPhA because of the pandemic and forged ahead in other areas that needed to be pushed through.

The Virtual House of Delegates was an awesome opportunity for us to continue our obligations and not give up on making critical policy statements just because we couldn't meet in person. The delegates got some great work done related to pharmacy's role in CBD, protecting the integrity of what a pharmacy is, as well as pharmacists' roles in COVID-19 prevention and shoring up MPhA's position on diversity, equity and inclusion.

MPhA Week was a fun way to Celebrate MPhA when we couldn't be together. The visibility and recognition of our Excellence in Pharmacy Award winners was well beyond what would have been achieved in person. We had several thousand online impressions! We hope that in 2021, we will be able to give those winners real applause. Thank you to the committees and the MPhA Foundation Board who provided so much information share! Thank you also to all who participated in our "actions" of the day - OTC jeopardy, Advocacy, Refer-a-Member and more by highlighting #MPhAWeek on your social media feeds. We celebrated us and shared some great moments with the broader pharmacy community.

So many members have been working with me to impact pharmacist scope of practice, engagement in COVID-19 testing and other ways to support patients during this pandemic. We continue to push the Hogan administration and MDH, while also working with our national partners. Join us as we gear up for the 2021 legislative session.

As we head into the Fall we will begin working on our next strategic plan. This is such an opportunity to recognize our new reality and to continue to move with courage from this reality to creating our next.

Aliyah N. Horton, CAE
Executive Director

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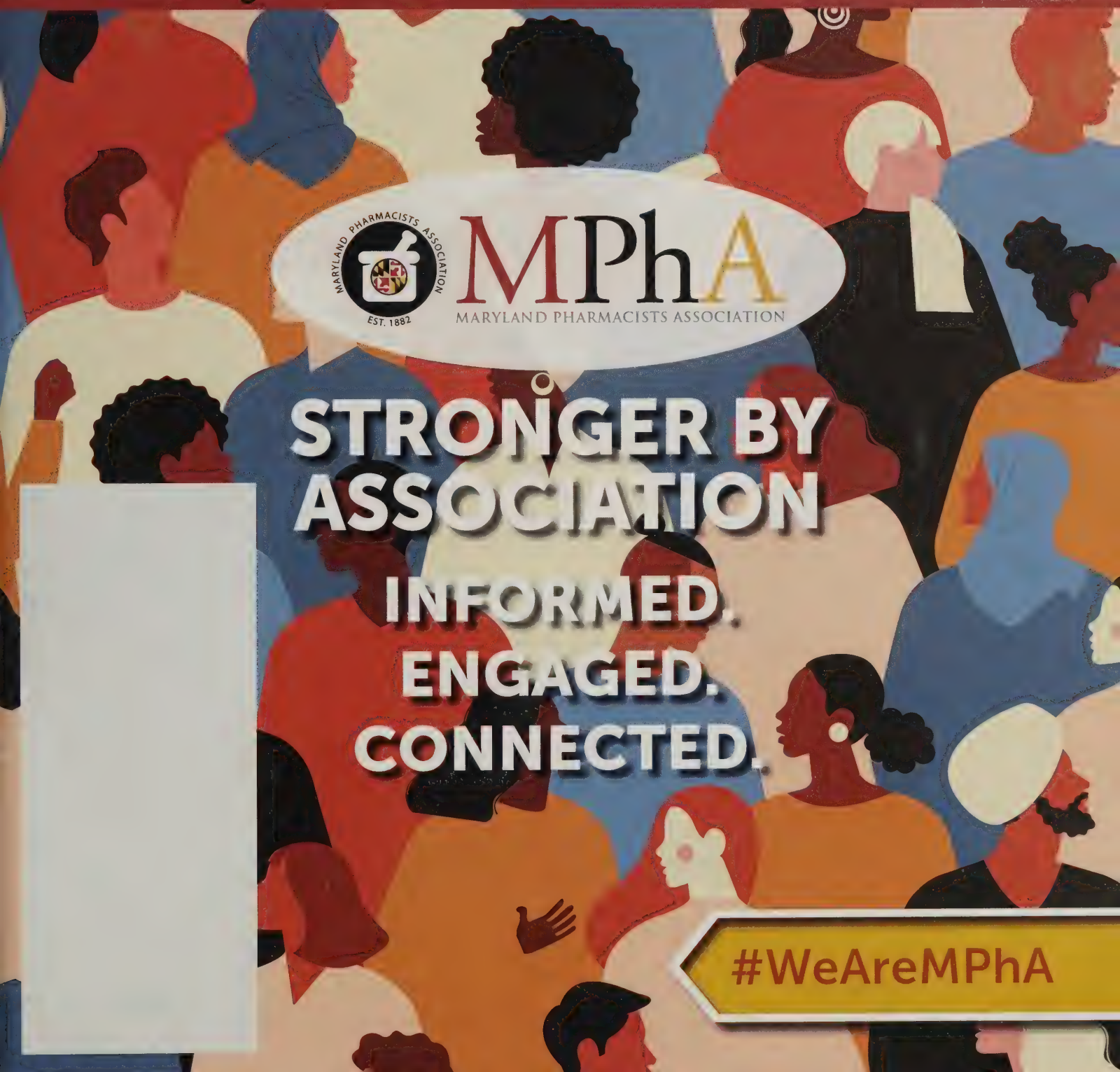

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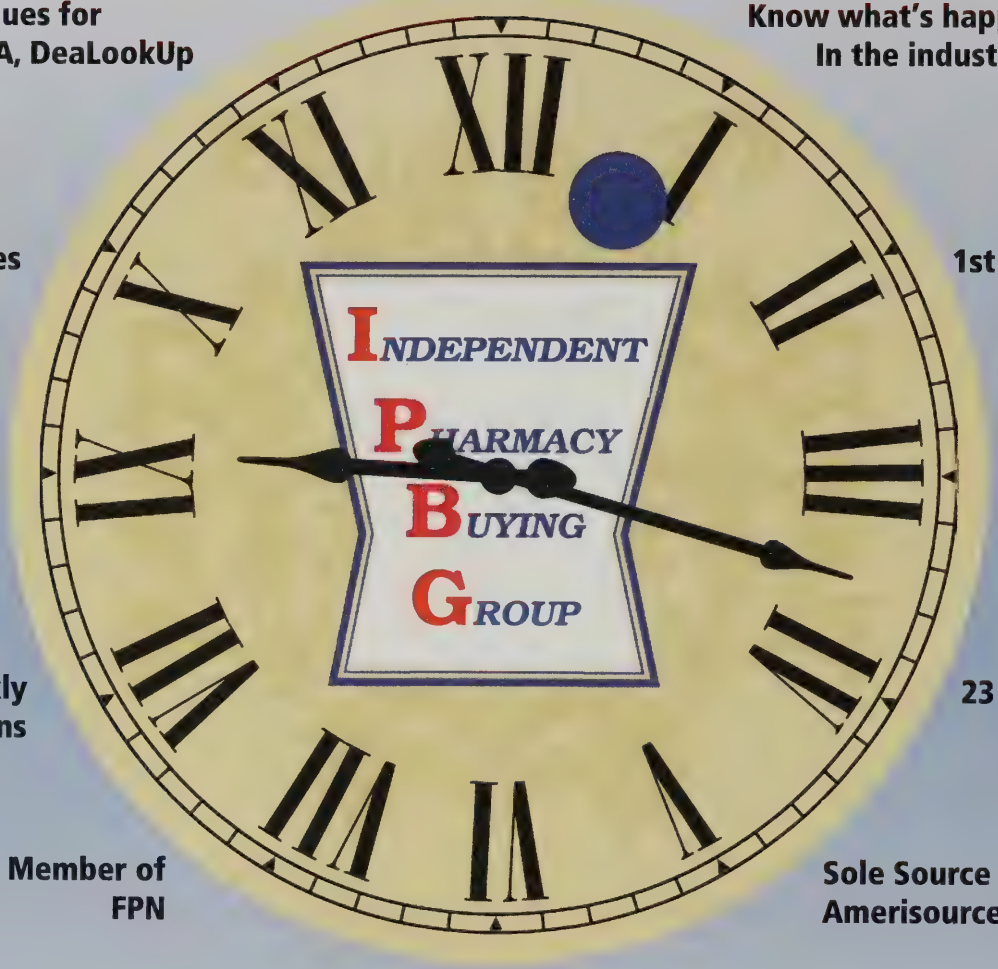

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It's MPhA Membership Renewal Season!

Informed, Engaged and Connected members of the pharmacy community provide MPhA the power to continue to fulfill our mission to promote excellence in pharmacy practice, strengthen the profession of pharmacy, and advocate for all Maryland pharmacists!

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Special thanks to Graphtech, Advertising Sales and Design

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President's Pad

Events in the world are bringing a lot of change this year, both personally and professionally. Some have been a long time in the making, such as the heightened awareness of racism and social injustice in the country. Others realizations are not new to us as pharmacists, such as our value as essential members of healthcare teams and our ability to provide broader access to vaccinations, but these ideas are finally being recognized on a national stage.

Despite the changing land0625 scape and feelings of uncertainty, there are also a lot that is the same. While we practice pharmacy in many different settings, most of us joined the pharmacy profession because we wanted to help others. That has not changed, and in fact, in many ways our recent challenges have brought out the best in us.

Pharmacists, pharmacy technicians, and student pharmacists across the state have stepped up to serve our communities. Technicians are going out of their way to provide extra care to their patients. Deans, faculty, and students have transitioned to a virtual learning environment to continue the education of our future pharmacists. Pharmacists are serving many roles. Some are researching COVID-19 to create a vaccine or treatment. Others are working to determine the public health implications and decrease health safety risks. Most of us are doing our best to reassure and care for our patients, while navigating a flurry of new information to best serve our communities; whether in a hospital, clinic, or a community pharmacy.

It is more important than ever that we all come together ... and work toward a better future. It is time for us to come together as one profession, and one voice, to continue to advance our profession.

It is more important than ever that we all come together, regardless of our backgrounds or practice settings, and work toward a better future. It is time for us to come together as one profession, and one voice, to continue to advance our profession.

Last year, MPhA revised the membership structure to give more options to Maryland pharmacists, pharmacy technicians, and student pharmacists regarding how they want to connect with our association. While maintaining more traditional membership options, a new Informed membership option was created to allow anyone to connect with us to receive communications about the work MPhA is doing on behalf of the pharmacy profession at no cost. This has created a new entry point, making it easier than ever for new members to get to know us and see the great work being done on their behalf. Our recently launched Ambassador Program is connecting interested new members with an experienced member to help them build connections and find opportunities to get involved based on their interests.

My hope is that each of you will lend your voice, and encourage your friends, peers, and coworkers, to lend their voices to our discussion to widen our perspectives and inform our choices as we continue to move the pharmacy profession forward for Maryland.

Kerry Cormier

Kerry Cormier, PharmD
MPhA President 2020-2021

Member Mentions & News You Can Use

Maryland Delegation to APhA House of Delegates

Congratulations to Chris Charles, Jim Dvorsky, CJ Franklin, Kinbo Lee (Acting Lead Delegate), Hoai-An Truong, and Saley Traore (Alternate) for being selected to represent Maryland in the 2020–2021 APhA House of Delegates. For MPhA policies, please connect with MPhA Resolutions Committee Chair Saley Traore at saleytraore@gmail.com to develop a resolution for consideration by the MPhA House of Delegates in 2021. Resolutions approved by House of Delegates become MPhA policy.

Congratulations to CPESN Maryland

The Community Pharmacy Foundation recently announced that CPESN Maryland was selected as a practice transformation team in the the second round of its Flip the Pharmacy Grant Program. MPhA in collaboration with the Maryland P3 program pledged financial and in-kind support for their application. Flip the Pharmacy aims to transform community-based pharmacy practice away from point-in-time, prescription-level transactional models toward longitudinal and patient-level care processes and value-based models. Using monthly change packages, coaches work with pharmacy teams to implement the six key transformation domains with an emphasis on continuing patient care planning with documentation in various eCare plan platforms. ●

MPhA *Welcomes* OUR NEWEST MEMBERS

MARYLAND PHARMACISTS ASSOCIATION

Welcome to MPhA: If you meet these new members, please welcome them to the MPhA Pharmily and be sure to invite them to join a committee or attend a networking event!

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Yongmin Ko – Baltimore
Yoojn Noh - McLean

Students

Ateeyeh Atefat, Rockville – NDU
Alexis DelPilar, Perry Hall – UMES
Caylah Manuel, LaCombre – NDU
Cynthia Mock, Laurel – UMB
Dana Rubin, Calabasas – USG (University of Shady Grove)
Daniel Abate, Germantown – UMB
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Janice Morales, Baltimore – NDU
Jemini Patel, Laurel – UMB
Jin Yi, Cockeysville – UMB
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Judy Nader, Takoma Park – UMB
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Aklilu Beyene – Houston
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Najah Gilliam – Baltimore ●

SAVE THE DATE

MPhA

2021 MID-YEAR MEETING

February 21 • Virtual

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Whether you are a pharmacist, pharmacy technician or student pharmacist this year's meeting will provide you with invaluable professional experience. MPhA invites you to join us for a day of virtual continuing education and networking.

Meeting Highlights Include:

- Mini Sessions on drug importation, legislation, CPESN and more!
- COVID-19 Updates and Practice Opportunities
- Pediatric Vaccinations
- Mental Health
- Diversity, Equity and Inclusion
- Medication Safety
- Networking with colleagues, sponsors and exhibitors

Registration opens soon!

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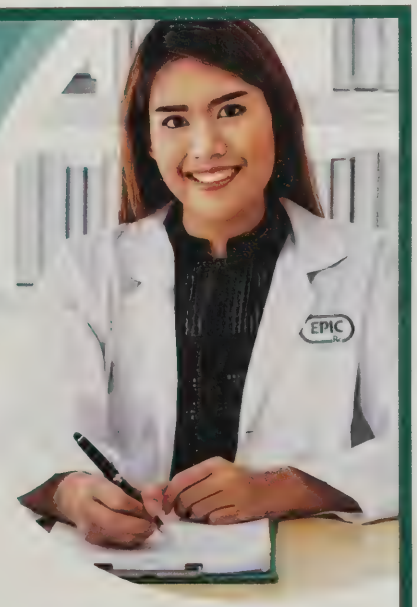

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This will be a fantastic opportunity to build your network within the pharmacy community. The INFORMED members will receive the Monday Message, Advocacy Alerts and notices about MPhA events and products. Informed members will not have voting rights or receive member discounts.

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ENGAGED
This level will take your engagement up a notch. The category includes all of the benefits from the Informed level plus voting rights, Maryland Pharmacist digital Journal, MPhA partner benefits and education discounts (at least $250 in savings).

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CONNECTED
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For more information about group (five or more members) and corporate partner memberships, please contact Lauren Williams at lauren.williams@mdpha.com.

SAVE THE DATES IN YOUR 2020–2021 CALENDAR

November 14 & 21, 2020
APhA Pharmacy-Based Immunization Delivery Certificate Course

November 19, 2020
MPhA Board of Trustees Meeting

December 17, 2020
Virtual Holiday Happy Hour!

February 2, 2021
Maryland Pharmacy Coalition Legislative Day

February 21, 2021
MPhA Mid-Year Meeting

MPhA Excellence in Pharmacy Awards

Each year, MPhA recognizes individual professional excellence during the MPhA Annual Convention. Nominations are reviewed and selections are made by the Past Presidents Council. Upon selection, individuals will be notified in advance of the Annual Convention. Nominations for the 2021 Annual Awards are now open!

Bowl of Hygeia Award

sponsored by the American Pharmacists Association Foundation and National Alliance of State Pharmacy Associations

Established in 1958, the Bowl of Hygeia Award recognizes pharmacists who possess outstanding records of civic leadership in their communities and encourages pharmacists to take active roles in their communities. In addition to service through their local, state, and national pharmacy associations, award recipients devote their time, talent, and resources to a wide variety of causes and community service. Any MPhA pharmacist member who has not already received the Bowl of Hygeia Award is eligible for nomination.

Maryland Pharmacists Association Seidman Distinguished Achievement Award

This award was established by the Maryland Pharmacists Association to recognize an individual who has made major contributions to the Maryland Pharmacists Association, organized pharmacy, and the profession of pharmacy. Any MPhA pharmacist member who meet the criteria for this award is eligible for nomination. Current members of the MPhA Board of Trustee are not eligible for this award.

Excellence in Innovation Award

sponsored by Upsher-Smith Laboratories, Inc. and the MPhA Foundation

Established in 1993, this award (formerly known as the Innovative Pharmacy Practice Award) aims to recognize forward-thinking pharmacists who have expanded their practices into new areas. Any practicing MPhA pharmacist member within the geographic area who has demonstrated innovative pharmacy practice resulting in improved patient care is eligible for nomination. Current members of the MPhA Board of Trustees are not eligible for this award.

MPhA Pharmacy Technician of the Year Award

The Maryland Pharmacists Association established this award in 2013 to recognize a pharmacy technician who has made major contributions to the expanding role of the pharmacy technician, the profession of pharmacy, and the Association. Nominations for the Technician Award are due by January 11, 2021. To be eligible for the award, the candidate must be a paid member of MPhA and a registered pharmacy technician not currently enrolled in a school of pharmacy.

Distinguished Young Pharmacist Award

sponsored by Pharmacists Mutual Companies

This award is presented each year to a pharmacist who has graduated within the past ten years and has made a significant contribution to the profession through service to a local, state, or national pharmacy organization. Any MPhA pharmacist member who has graduated from a school of pharmacy within the last ten years is eligible for nomination.

Maryland Pharmacists Association Mentor Award

This award, established in 2004, recognizes individuals who encourage pharmacists, technicians, and/or student pharmacists in the pursuit of excellence in education, pharmacy practice, service, and/or advocacy. Any MPhA pharmacist member who meets the criteria for the award is eligible for nomination. Current members of the MPhA Board of Trustees are not eligible for this award.

Maryland Pharmacists Association Honorary President

An honorary position on the Board of Trustees is given to a person, not necessarily a pharmacist, who has worked for MPhA or Maryland Pharmacy over a long period of time. Any long standing contributor to the profession or the Association is eligible for nomination. Current members of the MPhA Board of Trustees are not eligible for this award.

Pharmacist Advocate Award

The nominee must be a pharmacist who is a member of MPhA. The government affairs activity in which the nominee participated must have raised pharmacists' awareness of the political process, improved the pharmacy profession and the political process, and/or improved service and education to the patient. MPhA staff members, lobbyists, and state or federal officials are not eligible.Current members of the MPhA Board of Trustees are not eligible for this award.

Learn more here:

https://www.marylandpharmacist.org/page/AnnualAwards.

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Maryland's Pharmacists: Improving People's Health

By 2032, the U.S. could see a shortage of as many as 55,200 primary care physicians. Even if nurse practitioners and physician assistants are fully utilized, patient needs will not fully be met.[1]

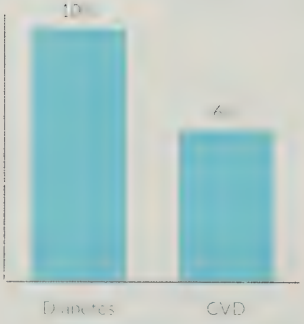
Maryland has 47 designated HPSAs and only 55% of the primary care needs in those areas are currently being met.[2] There are 5,310 highly trained pharmacists in MD who are ready to provide valuable healthcare services.[3]

Meeting Patients' Needs in Maryland

6 Million people[4]

112 more primary care providers are needed[5]

5,310 Pharmacists ready to help[6]



Prevalence of chronic disease in Maryland[9]

Diabetes

Diabetes is a complex condition that is often managed by multiple medications. Pharmacists can optimize care and help patients understand their medications and their condition in order to improve outcomes and avoid complications.[7]

Cardiovascular Disease (CVD)

For patients with uncontrolled high blood pressure, waiting even two months to optimize medications increases the risk of complications, including hospitalizations. Pharmacists are highly accessible members of the care team who significantly improve blood pressure control and can provide timely follow-up and monitoring to improve outcomes.[8]

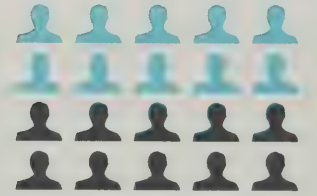
57% of Maryland residents were vaccinated for the flu[10]

Immunization rates across the U.S. have continued to increase since pharmacists began vaccinating.[11]

14% of people in Maryland smoke cigarettes[12]

Smoking causes nearly 1 of every 5 deaths in the U.S. each year.[13] Pharmacists are qualified and capable of providing smoking cessation counseling.

50% of people with chronic diseases do not take their medicines correctly.[14]



Medications are critical for the treatment of chronic conditions. Pharmacists can help patients use them safely and effectively to avoid medication related problems.

Maryland spends $6,655,825,064 annually on prescription medications.[15]

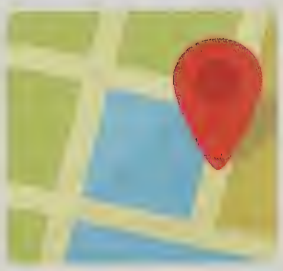
Investing in pharmacists' services optimizes the use of those prescription medications. Decades of research have proven the value of including pharmacists on healthcare teams. Improved health outcomes, lower costs, and increased access to care could be a reality for Maryland residents if pharmacists were fully empowered to serve as patient care providers.

90% of the nation's $3.5 trillion in annual health care expenditures are for people with chronic and mental health conditions.[16]

On average **$1,000** per patient per year is saved with pharmacist interventions for patients with chronic conditions.[17]

Pharmacists' counseling and adherence programs can save the healthcare system **$164** per patient in the 6 months following the start of a new prescription medication.[18]

Pharmacists are accessible. 93% of Americans live within 5 miles of a community pharmacy.[19]



Up to **30%** of Emergency Room visits are non-urgent.

Pharmacist prescribing for minor ailments can relieve pressure on Emergency Rooms.[20]

Maryland spent $11.5 billion on Medicaid in 2018.[22]

Oregon pharmacists wrote 10% of all birth control prescriptions since a landmark law was passed. Maryland pharmacists could do this too!

$4.40 saved per $1 spent on pharmacists' services[21]

This information was developed through a collaboration between APhA and NASPA with generous support from the Community Pharmacy Foundation.

Access our references at tinyurl.com/factsheet2020
Or scan this QR code with your smartphone

Editorial

Ubrelvy Tablet: New Drug Update

By: Shahin Azadikhah, PharmD Candidate 2021, University of Maryland Eastern Shore School of Pharmacy and Matthew Balish, Pharm.D., M.S., RPh., CDE, Staff Pharmacist, Apple Discount Drugs

Conflict of interest: Neither author has any financial or personal conflicts of interest.

Ubrelvy (Ubrogepant): A Highly Selective, Calcitonin Gene-Related Peptide (CGRP)

Ubrelvy (ubrogepant) was approved on 23 December 2019 in the USA by the Food and Drug Administration (FDA) for the acute treatment of migraine with or without aura in adults.[1] However, there is a limitation with Ubrelvy use; it is not intended for the preventative treatment of migraines.[1-2] Effectiveness and safety in the pediatrics population have not been determined. Ubrelvy is non-narcotic, not scheduled, and is unlikely to have overuse potential.[3] Currently, Ubrelvy is available only in 50 mg and 100 mg tablets and is administered orally. If necessary, another second dose could be administered at least two hours after the initial dose with a maximum daily dose of 200 mg without regard to food. The safety of treating more than eight migraines in 30 days has not been established.

In two randomized, double-blind, placebo-controlled, phase three trials, in adults with migraines, considerably more patients were pain free at two hours post-dose with Ubrelvy (50 mg, and 100 mg) compared to patients who took a placebo. In the first study, the p values were p=0.002 for 50mg and p=<0.001 for 100mg, respectively. The second study did not include the 100 mg arm, but the p-value for 50 mg tablets was p= 0.007. The secondary endpoints were sustained freedom from headache pain and absence of most bothersome symptom MBS from two to 24 hours after the first dose. Pain freedom was defined as a reduction of moderate or severe headache pain to no pain, and MBS freedom was defined as the absence of the self-identified MBS (i.e., photophobia, phonophobia, or nausea). In both studies, the percentage of patients achieving headache pain freedom and MBS freedom two hours post-dose was statistically significant among patients receiving Ubrelvy compared to those receiving placebo.[4-5]

Ubrelvy is contraindicated with concurrent use of strong CYP3A4 inhibitors and inducers. Potent inhibitors include (ketoconazole, itraconazole, clarithromycin, and inducers include (phenytoin, barbiturates, rifampin, and St. John's Wort). Dose modification is advised with concurrent use of Ubrelvy and moderate or weak CYP3A4 inducers and CYP3A4 inhibitors. Another finding was that Ubrelvy does not prolong the QT interval to any clinically relevant extent at twice the maximum recommended daily dose.[17]

Ubrelvy: Migraine Treatment, Cost, and Pregnancy

Migraine is currently ranked the sixth most disabling disorder globally in terms of disability-adjusted life years, with ~1.04 billion migraine sufferers.[6] The underlying causes of migraines are not fully understood. This novel drug works without constricting blood vessels, directly blocka CGRP, which may benefit people with cardiovascular diseases. The cost of this novel drug is about ($85 for a tablet Ubrelvy) and it comes in 10 units per package at the cost of $850. The most widespread adverse reactions (at least 2% and more significant than placebo) were nausea and somnolence.[7] Ubrelvy in pregnant rabbits it was shown to cause abortion, increased embryofetal mortality, and decreased body weight at birth.[17] There is no sufficient data on the developmental risk associated with Ubrelvy use during human pregnancy. Fetal risk cannot be ruled out and, based on animal data, may cause fetal harm. It is imperative to maintain a cautious approach. Risks and benefits must be discussed with the patient in detail. Centers for Disease Control and Prevention (CDC) strongly recommend that every woman, regardless of their migraine headaches, seek their physician's advice to become pregnant.[8]

The Limitation in of Use & Alternatives

Ubrelvy *must not* be used for the prevention of migraines in adults. Before starting prophylactic medications, it is required to evaluate if patients are using proper and adequate abortive therapies. Overuse of abortive medications may cause rebound headaches.[9-10] It is crucial to determine the frequency, duration, and severity of headaches, and any triggers that may precipitate the headaches. If causes and triggers can be identified and modified, preventive drug therapy may not be necessary.[11] According to the 2013 American Academy of Neurology (level A recommendation), the following drugs with off label use for migraine prevention have been established efficacious as first-line agents. Antiepileptic drugs including: Divalproex, valproate, topiramate. Beta-blockers (metoprolol, propranolol, and timolol), and triptans Frovatriptan for short-term menstrual associated migraine (MAM) prevention.

Frovatriptan has been useful in the prevention of menstrual migraine. Lamotrigine is ineffective for migraine prevention.[12]

Medication Overuses Rebound Headaches

In addition to numerous complications of antimigraine drugs, one of the restrictions imposed on using triptans, NSAID, ergotamine (except dihydroergotamine), and butalbital is rebound headaches. These rebound headaches arise from the excessive use of these medications, typically more than 10–15 days per month.[10] One of the crucial ways to combat medication overuse headache (MOH) is to educate the patients to limit acute treatment medications to 2–3 times per week, at most. If the drug is butalbital or an opioid, a slow taper is needed. According to the most recent study on rats, ubrogepant 100 mg/kg in repeated effective doses did not produce cutaneous allodynia (Cutaneous allodynia (CA) is characterized by pain provoked by the skin's stimulation that would ordinarily not produce pain)[13] or latent sensitization.[14] The research suggests that the gepant family's drugs are unlikely to lead to medication overuse headache (MOH) and are conceivably viable medications for acute treatment of migraine regardless of headache frequency. Even though CA affects 63% of migraineurs in the population and is associated with frequency, severity, disability, and associated symptoms of migraine, this study should be interpreted with caution for several limitations.[15] Further studies are required to confirm the claim, but Ubrelvy may be an auspicious new medicinal product for the acute treatment of migraine, particularly in patients with a history of MOH or at risk of evolving MOH, including those with recurrent migraine attacks or chronic migraine.

Dose Adjustment and the Safety Profile of the Ubrelvy

No dosage adjustment has been recommended for patients with mild or moderate hepatic impairment. However, a dose adjustment for ubrogepant is recommended for patients with severe hepatic impairment (Child-Pugh class C) and an initial dose of 50, and if a second dose is needed, the 50mg tablet would be appropriate to take at least two hours after the initial dose. The maximum daily dose for severe hepatic impairment must not exceed 100mg per day.[17-18] The renal route of elimination plays a minor role in the clearance of Ubrelvy. Dose adjustment is unnecessary for patients with mild or moderate renal impairment, but it is recommended for patients with severe renal impairment (CrCl 15-29 mL/min). The recommendation is 50 mg as a single dose and may repeat once based on response and tolerability after ≥2 hours with a maximum dose of 100mg per 24 hours. Avoid the use of Ubrelvy in patients with end-stage renal disease (ESRD) (CrCl <15 mL/min).

Tolerability and safety of Ubrelvy following intermittent, high-frequency dosing was studied in a randomized, placebo-controlled trial in healthy adults. Throughout this phase 1, multicenter, double-blind, parallel-group trial, eligible participants (age 18–50 years) were stratified by sex and randomly distributed in two arms with a 1:1 ratio to receive a placebo Ubrelvy 100 mg. Ubrelvy was administered at doses of 100mg (2 × 50 mg tablets) on two straight days, and then by two consecutive days of placebo, alternating for eight weeks. The primary outcome concerns were measures of safety and tolerability. The overall incidence rate of treatment-emergent adverse events was similar in the placebo (45%) and Ubrelvy (44%) groups.[16] The trial concluded that Ubrelvy was well tolerated in healthy participants, with no identified safety concerns. The intermittent dosing of two days of Ubrelvy 100 mg alternating with two days of placebo was not linked to the elevation level of Aspartate Aminotransferase (AST) or Alanine Aminotransferase (ALT) compared to placebo. Ubrelvy has demonstrated no clinically relevant signal of hepatotoxicity with intermittent dosing. Further studies could be done to assess patients' safety with comorbidities, taking multiple medications, and those with liver disease or abnormalities.

In conclusion, Ubrelvy, the novel CGRP receptor antagonist, could be a valuable medication for treating acute migraine with or without aura in adults, especially to those with underlying diseases such as stroke,(medication overuse headache) MOH, and mild-moderate renal and hepatic impairment. There was no indication of hepatotoxicity through the intermittent dosing utilized, which mirrors how it would be used for someone with acute migraines. The oral administration route of the drug makes it accessible to a wide range of patients. Ubrelvy has demonstrated a positive effect on migraines' acute treatment and relieves some of the post pain migraines and sustained pain freedom between two to 24 hours post-dose. However, more studies need to be conducted regarding concomitant medications, long-term safety, and efficacy, and in comparison, to known effective treatments. The safety of treating more than eight migraines per month has not been established, and the fetal risk in pregnancy cannot rule out. Ubrelvy should not be used as a preventive method. ●

REFERENCES

1. Scott LJ. Ubrogepant: First Approval. *Drugs*. Published online 2020. doi:10.1007/s40265-020-01264-5C
2. FDA approves new treatment for adults with migraine | FDA. Accessed October 9, 2020. https://www.fda.gov/news-events/press-announcements/fda-approves-new-treatment-adults-migraine
3. Ubrogepant, First Oral CGRP Receptor Antagonist, Approved by FDA. Accessed October 9, 2020. https://americanheadachesociety.org/news/Ubrogepant+Approved+by+FDA
4. Lipton RB, Dodick DW, Ailani J, et al. Effect of ubrogepant vs placebo on pain and the most bothersome associated symptom in the acute treatment of migraine: The achieve ii randomized clinical trial. *JAMA - J Am Med Assoc*. 2019;322(19):1887-1898. doi:10.1001/jama.2019.16711

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Editorial

Delving Into the Practice of Solid Organ Transplant at UMMC

By: Karen Huang, PharmD, At the time article was written: PharmD Candidate 2020, University of Maryland School of Pharmacy

Sara Hammad, PharmD, BCPS, Transplant Clinical Pharmacy Specialist

Sari Freedman, PharmD, Transplant Clinical Pharmacy Specialist

Deanna Tran, PharmD, BCACP, Assistant Professor

The authors have no financial or personal conflicts of interest.

In September of 2019, I had the firsthand pleasure of learning under the solid organ transplant team at University of Maryland Medical Center (UMMC) during an Advanced Pharmacy Practice Experience (APPE). This rotation was influential in shaping my career interests and goals. From the progressive culture and devotion to advancement and education, pharmacy is well-integrated into the practice model across the continuum of care at UMMC. With exciting expansions into ambulatory care and academia, UMMC is one of many new dynamic leaders in solid organ transplant pharmacy. Whether you are a practitioner or a student pharmacist, no matter your discipline or area of interest, you are bound to encounter patients who are transplant recipients, and I want to share with you a few things I learned on this rotation.

There is no doubt that transplant recipients are a uniquely complex patient population. Their success post-operatively depends heavily on a delicate balance between immunosuppression and infection prophylaxis. These patients have a range of medical and surgical needs and require an interdisciplinary approach to patient care, and UMMC embraces this perspective wholeheartedly. UMMC is a comprehensive solid organ transplantation center that performed 436 adult and pediatric transplants in 2018, including kidney, pancreas, liver, heart, lung, and multiple organ transplants.

The transplant pharmacy team consists of seven full-time residency-trained clinical pharmacy specialists, as well as a postgraduate year two (PGY-2) solid organ transplant pharmacy resident. Together, they provide clinical services with daily rounds and are accessible via on-call pager 24 hours, 7 days a week, including weekends and holidays. The team operates on a rotating pharmacist model, where each clinical specialist covers a particular organ service for a period of time before switching to a different service. This allows for consistent daily patient care, standardizes practice amongst all services, and requires all clinical specialists to be proficient in every type of transplant. And while pharmacists do rotate through the services, each serves as a point of contact for a specific area/organ, whether it be outpatient versus inpatient, kidney, liver, lung, or heart, allowing for more in-depth protocol development and research.

The team operates under a long-standing collaborative practice agreement (CPA), a living, breathing document that has evolved immensely since its inception in 1997. In order to practice under the CPA, pharmacists undergo a rigorous training process culminating in a formal professional practice evaluation. Upon completion, clinical pharmacy specialists are able to independently adjust immunosuppression, antimicrobial prophylaxis, and opportunistic infection treatment as well as order pertinent laboratory tests on behalf of the provider after multidisciplinary rounds. As a result, their physician counterparts are able to prioritize the patients' other medical and surgical needs. Under this arrangement, pharmacists can make numerous interventions, including pharmacokinetic evaluation, dose adjustments, and medication counseling, which have led to great improvements in patient safety, adherence, and healthcare cost savings. At UMMC, the impact of the CPA has expanded from kidney, liver, and pancreas services to include heart, lung, and the ambulatory clinic as well.

Outside of their direct inpatient care duties, the UMMC transplant pharmacists utilize their expertise in numerous other ways. UMMC holds weekly multidisciplinary meetings to determine a patient's candidacy for transplant. During these selection meetings, a pharmacist offers recommendations for the appropriate immunosuppression regimen on a case-by-case basis and evaluates the patient's current medications to ensure necessary medication changes are made prior to transplant and that there are no contraindications or other considerations for transplant. They also propose similar interventions at biopsy meetings and at-risk kidney meetings for patients who may be experiencing

Continued on page 22

Continuing Ed

Food for Thought: Introduction of Standardized Peanut Allergen Powder

By: Wendy Tsang, University of Maryland, Baltimore, PharmD Candidate 2021 and
Kathleen J. Pincus, PharmD, BCPS, BCACP

Learning Objectives

After this activity, the pharmacist will able to:

1. Describe the pathophysiology of food allergy development
2. Describe the impacts of peanut allergies on the healthcare system
3. Describe the handling, dispensing, administration, and safety precautions for Peanut (Arachis hypogaea) Allergen Powder-dnfp (PAP-dnfp)
4. Identify patient populations most likely to benefit from PAP-dnfp treatment
5. Compare the risks and benefits of PAP-dnfp treatment with the standard of care for food allergies

After completing this activity, the pharmacy technician will be able to:

1. Describe the pathophysiology of food allergy development
2. Describe the impacts of peanut allergies on the healthcare system
3. Compare the risks and benefits of PAP-dnfp treatment with current allergy treatment options

Keywords

Peanut, Allergy, Palforzia, Immunotherapy

Peanut Allergies and Its Impact on the U.S.

Food allergies are a chronic and potentially life-threatening condition impacting millions of Americans. Food allergies occur when the immune system perceives otherwise harmless proteins or antigens found in the diet as a threat.[1] Initial exposure to the dietary trigger primes the body to produce allergen-specific antibodies (Immunoglobulin E, IgE) through a process called sensitization.[1] Upon re-exposure, an IgE-mediated hypersensitivity response propagates the release of histamine, cytokines, chemokines, and other inflammatory cells.[1,2] As a result, sufferers clinically present with mild to life-threatening anaphylactic symptoms.[1]

Most food allergies develop within the first two years of life, with and 5.6 million U.S children (7.6%) estimated to develop at least one food allergy.[3,4] While allergic reaction severity can range from mild to severe, food-induced anaphylaxis accounts for 30–50% of emergency department (ED) encounters in those younger than 18 years.[5] Almost any food may induce IgE-mediated hypersensitivities yet, dairy, seafood, nuts, and soy are responsible for up to 90% of adolescent allergies.[4,6] Among this list, peanuts are associated with the highest proportion of severe allergy cases, prevalence rates, and ED admissions.[4,5] From 2005 to 2014, peanut-induced anaphylaxis rates rose by 195% (1.99 to 5.85 ED admissions per 100,000 adolescents), presumably due to inadequate disease-modifying interventions.[5]

Unfortunately, the consequences of this condition are far-reaching and extend beyond the patient. In addition to morbidity and mortality outcomes, the cost of anaphylaxis prevention and peanut allergy treatment places economic burdens on families and the healthcare system. Annually, the national impact of food allergies is approximately $4.3 billion in direct medical costs and despite having health insurance coverage, parents and caregivers still incur up to $5.5 billion in out-of-pocket costs. Parents and caregivers also report experiencing lower work productivity levels and opportunity costs as a result of time spent on frequent medical visits, further adding stress to the existing financial burden.[7]

Optimizing treatment for peanut allergies is critical to reduce the rapid upward trends observed in children and adolescent ED admissions and insurmountable financial costs.

Standard of Care for Treatment of Peanut Allergy

The U.S. National Institute of Allergy and Infectious Diseases (NIAID) and the National Institute of Health (NIH) collaborated to create a clinical guideline for management of peanut allergies in 2010, which was updated in 2017. These guidelines recommend a detailed medical history, thorough physical examination, skin prick test (SPT), and/or allergen specific serum IgE testing (sIgE) when diagnosing a peanut allergy. In some cases, an oral food challenge may also be used for diagnostic purposes.[8] Severe eczema and/or egg allergies frequently coexist with peanut allergies;[3,9] early sIgE testing is recommended for children with either condition. SIgE testing is a quantitative blood test. Children with sIgE levels found below 0.35 kilo units of allergen per liter (kUa/L) are less likely to develop peanut allergies than those with levels above this threshold.[8] SPT is a highly sensitive test involving pricking a patient's skin with a needle primed with an incremental dose of peanut extract and saline for control.[8] Measurements of wheal diameters at the puncture sites allow clinicians to predict the potential existence of a peanut allergy. Diameters of 3–7 mm larger than the corresponding saline wheal is associated with higher likelihoods of a peanut allergy. Diameter difference of $\geq$ 8 mm has a 95% positive predictive value for established peanut allergies.[8]

Similar to other food allergies, there are no existing therapies that can cure, prevent, or treat allergies to peanuts. While a small percentage of patients may be fortunate enough to outgrow their allergy, peanut allergies are often a lifelong disease.[8] The mainstay of treatment is strict peanut avoidance and symptom management with the use of antihistamines for mild symptoms or epinephrine for severe symptoms.[8] However, regardless of patient vigilance, the widespread use of peanuts in the food industry make complete avoidance very challenging. Because of the various degree of peanut sensitivities observed across the U.S. population, even trace amounts of peanut protein have the ability to elicit a life-threatening anaphylactic reaction. The risk of unexpectedly experiencing anaphylaxis from accidental peanut consumption supports the notion that current treatments are insufficient in addressing these concerns. As food is an integral component to health and social engagement, the inability to eliminate the risk of anaphylaxis instills anxiety and fear in many affected individuals and caretakers. Over time, the associated uncertainty can negatively impact the overall quality of life.

Despite limited therapeutic options for peanut allergies, there is ongoing evidence that children and adolescents may benefit from early peanut introduction. Some allergists also attempt desensitization using oral immunotherapy (OIT) where oral doses of the food allergen are introduced to the body at increasing doses until a maintenance dose is achieved and then taken regularly. The main goal of OIT is to induce and sustain a higher level of tolerance towards the dietary trigger.[10] One of the greatest challenges in OIT is the lack of an established standard protocol to guide clinicians. Therefore, OIT therapy is highly individualized for patients and implemented differently among clinicians.[11] OIT practice has dated back as far as 1905; however, its popularity as a treatment option is blunted by the limited product choices.[12] In order to offer OIT, many clinicians rely on third party compounding facilities to encapsulate commercially available products, however, the lack of stringent quality control in these products increase the risk of dosing errors.[11] Nonetheless, OIT is gaining popularity as more clinicians and researchers explore the benefits.

Introduction of PAP-dnfp (Palforzia)

Regardless of the longstanding history of OIT, there was no approved product to streamline this practice until January 2020 when the Food and Drug Administration (FDA) approved the first OIT agent for peanut allergies. Palforzia, Peanut (Arachis hypogaea) Allergen Powder-dnfp (PAP-dnfp), is manufactured as capsules and sachets by Aimmune therapeutics [Table 1]. The powder is sourced from dry roasted peanuts and closely evaluated for specific quantities of allergenic peanut proteins.[13] The intended objective for PAP-dnfp is to reduce the severity of allergic reactions, including anaphylaxis, caused by accidental peanut exposure in patients aged four through 17 years old.[14] It is important to emphasize that PAP-dnfp is not intended to treat allergic reactions but rather to increase the required threshold before experiencing a severe reaction. While on therapy, patients must continue to strictly adhere to a peanut-free lifestyle.

Table 1

Dosage Form	Available Strength(s)
Capsules	0.5 mg, 1 mg, 10 mg, 20 mg, 100 mg
Sachet	300 mg

To qualify for PAP-dnfp treatment, patients must be between the ages of four through 17 years old with a confirmed peanut allergy diagnosis. The patient must also not have a prior history of uncontrolled asthma, eosinophilic esophagitis (EoE), or other eosinophilic gastrointestinal diseases. Furthermore, patients must be willing and able to receive or self-administer injectable epinephrine as PAP-dnfp carries a risk of severe allergic reactions, including anaphylaxis.[14]

PAP-dnfp is only available through the Palforzia Risk Evaluation and Mitigation (REMS) Program. Healthcare settings, administering providers, pharmacies, and patients who intend to utilize PAP-dnfp must all be REMS certified prior to starting treatment. In order to become certified, healthcare facilities, providers, and staff must review PAP-dnfp's Education Program and complete proper administration and dispensing training. In addition, healthcare settings must comply with requirements involving the presence of a certified prescriber on-site to counsel, monitor, and manage patients if anaphylaxis were to occur. After completion of all necessary steps, the healthcare setting, pharmacies, and provider(s) must complete and submit their enrollment forms and await approval from the REMS Program.[15] Once identified as an appropriate candidate for PAP-dnfp, the patient and certified provider must discuss the treatment risks and sign the REMS patient enrollment form.[15]

Once successfully enrolled, patients receive treatment at a REMS approved healthcare setting where the medication is administered in three sequential phases labeled as initial dose escalation, up-dosing, and maintenance. The initial dose escalation phase is administered by a certified provider on a single day. The medication for the initial dose escalation phase is provided as a single card with five blisters containing PAP-dnfp powder labeled A-E dictating the sequence of administration for dose escalation [Table 2]. Dose levels are separated by 20 to 30 minutes of observation. After ingesting the last dose, patients must be monitored for at least 60 minutes for signs of adverse reactions or anaphylaxis.[15]

Patients are required to successfully complete initial dose escalation up to at least dose level D (3 mg) without serious adverse effects to continue onto the second phase, up-dosing. The up-dosing phase consists of 11 dose levels administered over a course of 22 weeks starting with 3 mg [Table 3]. Bi-weekly visits are required for providers to administer and monitor the first dose of each dose level until all 11 titrations are completed. Clinicians must observe their patients for at least 60 minutes for any adverse reactions and if the first dose is well tolerated by the patient, the remaining doses before the next level may be taken at home. To administer PAP-dnfp, capsules or sachets must be emptied and mixed into a few spoonfuls of refrigerated or room temperature

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Table 2

Dose Level	Dose Total	Dose Configuration
A	0.5mg	One 0.5mg capsule
B	1mg	One 1mg capsule
C	1.5mg	One 1mg capsule, One 0.5mg capsule
D	3mg	Three 1mg capsules
E	6mg	Six 1mg capsules
	Total Daily Dose on Day 1 — 12 mg	

Table 3

Dose Level	Total Daily Dose	Dose Configuration
1	3mg	Three 1mg capsules
2	6mg	Six 1mg capsules
3	12mg	Two 1mg capsules, One 10mg capsule
4	20mg	One 20mg capsule
5	40mg	Two 20mg capsules
6	80mg	Four 20mg capsules
7	120mg	One 20mg capsule, One 100mg capsule
8	160mg	Three 20mg capsules, One 100mg capsule
9	200mg	Two 100mg capsules
10	240mg	Two 20mg capsules, Two 100mg capsules
11	300mg	One 300mg sachet

Table 4

Dose Level	Total Daily Dose	Daily Dose Configuration
11 (Maintenance)	300mg	One 300 mg sachet

semi-solid foods such as applesauce, yogurt, or pudding, then orally consumed immediately at the same time every day. It should never be mixed with a liquid or exposed to heat as it may alter the efficacy of the powder and any unopened doses should be stored in the refrigerator. Upon completion, patients should be able to tolerate a 300 mg dose of PAP-dnfp. To maintain the new threshold to peanuts, patients must continue daily administration of 300 mg [Table 4].

Evidence for PAP-dnfp (Palforzia) Use

Prior to its approval, PAP-dnfp was referred to as AR101 and underwent a series of five phase 3 clinical trials which are published in the Peanut Allergy Oral Immunotherapy Study of AR101 for Desensitization in Children and Adults (PALISADE) study.[16] This study was an international, multicenter, randomized, double-blind, placebo-controlled trial which determined the efficacy and safety data needed to support PAP-dnfp's claim to desensitize patients with peanut-allergies. At baseline, enrolled participants could not tolerate more than 30 mg of peanut protein, approximately one-tenth of a peanut kernel, before experiencing adverse reactions. Upon completion of the PALISADE study, investigators concluded that with daily administration of PAP-dnfp, patients between the ages of 4 through 17 years old showed favorable increases in tolerance to peanuts.[17]

The primary efficacy endpoint of the PALISADE study was the proportion of participants who could ingest a challenge dose of at least 600 mg with no more than mild dose-related symptoms. To assess this, a double-blind placebo-controlled food challenge (DBPCFC) of single doses ranging from 3 mg to 1000 mg was performed at the end of a six month maintenance period for subjects who were able to regularly ingest 300 mg of PAP-dnfp without adverse effects.[13] The basis of success was met if the lower bound of the 95% confidence interval (CI) revealed a treatment difference greater than 15% between PAP-dnfp and placebo. Based on this criterion, the PALISADE trial successfully demonstrated an estimated efficacy difference of 63.2% with a 95% CI between 53.0 and 73.3 for the intended population between 4 to 17 years of age.[13]

As secondary endpoints, investigators observed the proportion of patients able to tolerate a single highest dose of 300 mg and 1000 mg when performing DBPCFC along with the maximum severity of symptoms this population experienced at any challenge dose. In addition, 18 to 55 year old participants were also enrolled in the study to determine the proportion of adults who could tolerate a single highest dose of at least 600 mg without significant adverse symptoms. Between the two populations, there were approximately 409 adolescents and only 33 adults who completed the trial.[13] However, adults in the active arm did not show clinically significant benefits when compared to the placebo arm. As a result, this portion of the study was terminated. Of note, data from the enrolled adult population, as well as participants who failed to tolerate the dose titration phase, were excluded in the efficacy analysis which may bias interpretation of the primary efficacy outcome.[13] On the other hand, 62% (95% CI 42-79%) of the adolescent participants were able to tolerate, on average, the equivalent dose of four whole peanut kernels before experiencing clinically significant signs of allergies by the conclusion of the investigation.[13] Despite the success in this trial, there is still a need to research the long term efficacy of PAP-dnfp as the clinical trials do not have desensitization data beyond 6 months of maintenance therapy.

Though the data supports PAP-dnfp's ability to raise the threshold of tolerable accidental peanut exposures, the benefits are also associated with a lengthy list of safety precautions. Aside from common gastrointestinal adverse effects, a major highlight in this study reported that those undergoing PAP-dnfp treatment experienced higher risks of systemic allergic reactions, higher rates of epinephrine use, and increased occurrence of allergy symptoms.[13] This was evidenced by the 53 (14.2%) participants in the active group who experienced systemic adverse events, compared to four (3.2%) participants in the placebo group.[13] Of the 53 participants, there was one case of severe anaphylaxis and seven cases which led to the participant withdrawing from the trial. In comparison, no anaphylactic cases or withdrawals were observed in the placebo arm. Similar trends were seen in epinephrine administration (active group n=52, 14.0%, placebo group n=8, 6.5%).[17] Moreover, 12 patients in the active arm developed eosinophilic esophagitis (EoE),[13] an allergic inflammatory condition characterized by an accumulation of white blood cells in the esophagus leading to symptoms of dysphagia and fibrosis,[18,19] while no participants in the placebo arm were affected.

Patients who elect for PAP-dnfp must understand the serious risks of its use, successfully enroll in the REMS program, and work with REMS-approved clinician(s) to receive treatment. Once started on therapy, patients must carry an epinephrine injector, strictly adhere to peanut avoidance, and correctly handle the contents of PAP-dnfp at all times. Additionally, treatment does not mitigate the risk of an allergic reaction from occurring but aims to minimize the reaction severity if exposed. Extrinsic cofactors such as hot water exposure or exercise induced-body temperature fluctuations, fasting, menstruation, sleep deprivation, non-steroidal anti-inflammatory drug (NSAID) use, uncontrolled asthma, and concurrent illnesses such as viral infections are unique to PAP-dnfp and may enhance the risk of a sudden allergic reaction.[13] In order to reduce these risks, patients must take extra precautions when considering each cofactor and modify their daily lifestyle accordingly. PAP-dnfp's approval may be considered a breakthrough for peanut allergy management but patients must heavily assess if the benefits exceed the risks of therapy.

Place in Therapy

Patients ages 4 to 17 years old with diagnosed peanut allergies saw the most benefit from PAP-dnfp treatment. Although the achievement of the primary efficacy endpoint was significant, the placebo group experienced fewer rates of adverse effects while still actively avoiding peanuts. This may limit the population suitable for PAP-dnfp treatment. Due to the plethora of risks requiring strict lifestyle changes to tolerate the equivalent of two peanuts,[13] parents and children of mild to moderate reactions may feel less inclined to attempt OIT. At this time, it is unclear if older patients with peanut allergies would benefit from PAP-dnfp use, as only a small number of adult patients participated in the clinical trials. At a cost of $890 a month or roughly $11,000 a year,[20] patients who would best benefit from this treatment would most likely be individuals who suffer from extremely severe adverse events or anaphylaxis from trace amounts of peanut exposure, have a history of frequent accidental exposures, and/or are experiencing significant negative impacts in quality of life due to their allergy.

With consideration of the strict REMS program requirements, PAP-dnfp will most likely be dispensed in specialty pharmacies and healthcare settings. Community pharmacists and pharmacy technicians may receive questions from patients and family members about this product or be presented with a prescription, possibly during the maintenance phase. To ensure the safe use of this medication, pharmacists and technicians should not dispense PAP-dnfp unless they have completed the REMS training program. Before dispensing to a new patient, pharmacy staff should ensure that the prescriber and patient have also completed all required training. Pharmacists should be educated on the risks and benefits of PAP-dnfp to best counsel patients with peanut allergies who inquire about its treatment. Furthermore, patients on PAP-dnfp treatment are required to carry life-saving epinephrine which is dispensed at community pharmacies. When encountering a patient, pharmacists should review the medication profiles of those taking PAP-dnfp to ensure that these patients are also prescribed an epinephrine injector, counseled on identifying anaphylactic symptoms, the importance of carrying the rescue medication, and appropriate administration techniques. Overall, PAP-dnfp is not intended to cure peanut allergies but its approval ensures strict regulation, quality control, and product consistency which may address ambiguity concerns in OIT practices. This clinically efficacious supplement to current mainstays of therapy is most importantly, the first step towards standardizing peanut allergy management.

Conclusion

Peanut allergies are a chronic condition that develop in early childhood and persist through adulthood. Its rising trend amongst adolescents accounts for up to half of anaphylactic ED admissions. Due to limited therapies to prevent and treat peanut allergies, increases in adolescent peanut allergies are anticipated to continue. The financial, social, and physical toll of adverse reactions from accidental exposures have caused great concerns to the public health, healthcare, and economic systems across the U.S. With a standard of care that mostly emphasizes the use of antihistamines and avoidance measures, the FDA approval of PAP-dnfp OIT opens new doors for young and severely peanut sensitive patients. The hefty cost and risks associated with PAP-dnfp may limit its use, but it's demonstrated benefits of fewer hospitalizations and improved quality of life will be meaningful to some patients. In high risk patients, the ability to live life with less fear of the unintentional exposures may be priceless.

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Active Learning Patient Case

Skylar Peters is a 5-year-old male (41 inches, 42 lbs, NKDA). His mother, Mrs. Peters is a regular at your pharmacy. They both present to the pharmacy to pick up Skylar's corticosteroid cream to treat his recurrent eczema. Skylar has dry-red patches on the inner crevices of both of his arms but is otherwise happy and healthy. Mrs. Peters explains that Skylar has developed a habit of picky eating and lately, has only been eating his hard-boiled eggs and baby carrots if they are cut and formed into a smiley face.

1. Should Mrs. Peters have Skylar evaluated for peanut allergies?

a. No, Skylar is too young to have peanut allergies

b. No, Skylar would need to have both severe eczema and egg allergies

c. Yes, severe eczema often coexists with peanut allergies

d. Yes, all children should be evaluated for peanut allergies

2. You see Mrs. Peters at the pharmacy two weeks later and she mentions that Skylar's SPT wheal was "enormous" and the doctor diagnosed Skylar with a peanut allergy. In what instance would Skylar NOT be an appropriate candidate for PAP-dnfp (Palforzia) treatment?

a. Skylar's peanut allergies only present as mild to moderately severe reactions

b. Skylar experiences multiple accidental exposure to peanuts

c. Skylar's health insurance does not cover Palforzia treatment

d. Skylar develops symptoms of uncontrolled asthma when turning 16 years old

3. What major risk(s) should Mrs. Peters be educated on when deciding whether or not PAP-dnfp (Palforzia) may be a good treatment option for her son?

a. Skylar may have rebound allergic reactions if he discontinues treatment

b. There is a risk of developing EoE if Skylar were to engage in exercise or have a hot bath while on treatment

c. PAP-dnfp is sourced from organic peanuts and is a very safe product with limited risks

d. Even with PAP-dnfp treatment, Skylar can still experience a life-threatening anaphylactic event

4. When you see Mrs. Peters at the pharmacy again, you notice that Skylar was started on PAP-dnfp. What counseling point(s) should Mrs. Peters receive regarding the administration of PAP-dnfp for her son?

a. Mrs. Peters should crush the capsules and mix it into Skylar's favorite drink to mask the taste

b. Skylar should continue to avoid peanuts and Mrs. Peters should mix opened PAP-dnfp capsules with room temperature or refrigerated semi solid foods

c. Mrs. Peters no longer needs to pick up epinephrine because PAP-dnfp will cure Skylar's allergies to peanuts

d. Mrs. Peters can store a few doses of PAP-dnfp in her purse so she does not forget to give it to Skylar while they are out

5. What is the appropriate dosing schedule for Skylar during the second phase (up-dosing) of PAP-dnfp treatment?

a. Titrating dose levels once every two weeks for 22 weeks

b. Titrating dose levels once every two weeks for six months

c. Titrating dose levels once every week for 11 weeks

d. Titrating dose levels once every month for a year

Answers on next page

REFERENCES

1. Vickery BP, Chin S, Burks AW. Pathophysiology of Food Allergy. *Pediar Clin of North Am.* 2011;58(2):363-376.doi:10.1016/j.pcl.2011.02.012
2. Patel R, Koterba AP. *Peanut Allergy*. Treasure Island, FL: StatPearls Publishing; 2019. https://www.ncbi.nlm.nih.gov/books/NBK538526/?report=classic. Accessed May 2, 2020.
3. Togias A et al. Addendum guidelines for the prevention of peanut allergy in the United States: Report of the National Institute of Allergy and Infectious Diseases–sponsored expert panel. *World Allergy Organ J.* 2017;10:1. doi:10.1186/s40413-016-0137-9
4. Gupta RS, Warren CM, Smith BM, et al. The Public Health Impact of Parent-Reported Childhood Food Allergies in the United States. *J Pediatr.* Dec 2018;142(6).doi:10.1542/peds.2018-1235
5. Motosue MS, Bellolio MF, Van Houten HK, et al. National trends in emergency department visits and hospitalizations for food-induced anaphylaxis in US children. *Pediatr Allergy Immunol.* 2018;29(5):538-544. doi:10.1111/pai.12908
6. Al-Ahmed N, Alsowaidi S, Vadas P. Peanut Allergy: An Overview. *Allergy Asthma Clin Immunol.* 2008;4(4):139. doi:10.1186/1710-1492-4-4-139

7. Gupta RS, Holdford D, Bilaver L, et al. The Economic Impact of Childhood Food Allergy in the United States. *JAMA Pediatr.* 2013; 167(11):1026-1030.doi:10.1001/jamapediatrics.2013.2376.

8. Boyce J, Assa'ad A, Burks A, et al. Guidelines for the Diagnosis and Management of Food Allergy in the United States: Report of the NIAID-Sponsored Expert Panel. *J Allergy Clin Immunol Pract.* 2010;126(6):S1-S58. doi:10.1016/j.jaci.2010.10.007

9. Du Toit G, Roberts G, Sayre PH, et al. Randomized Trial of Peanut Consumption in Infants at Risk for Peanut Allergy. *N Engl J Med.* 2015;372(9):803-813. doi:10.1056/NEJMoa1414850

10. Scurlock AM. Oral and Sublingual Immunotherapy for Treatment of IgE-Mediated Food Allergy. *Clin Rev Allergy Immunol.* 2018;55(2):139-152. Doi:10.1007/s12016-018-8677-0

11. Landhuis E. Allergists Debate Anticipated FDA Approval of a Peanut Allergy Drug. npr.org. https://www.npr.org/sections/health-shots/2019/09/23/763394019/allergists-debate-anticipated-fda-approval-of-a-peanut-allergy-drug. Published September 23, 2019. Accessed June 19, 2020.

12. Deol S, Bird JA. Current opinion and review on peanut oral immunotherapy. *Human Vaccines & Immunotherapeutics.* 2014;10(10):3017-3021. doi:10.4161/hv.32190

13. Biologics License Application (BLA) Clinical Review Memorandum. Fda.gov. https://www.fda.gov/media/135488/download. Published online January 29, 2020. Accessed June 11, 2020.

14. PALFORZIA [Package Insert]. Durham, NC: Aimmune Therapeutics, Inc; 2020

15. Palforzia [Peanut (Arachis hypogaea) Allergen Powder-dnfp]. Palforzia.com. https://www.palforziarems.com/#Main.Accessed May 10, 2020.

16. U.S. Food and Drug Administration. Peanut Allergy Oral Immunotherapy Study of AR101 for Desensitization in Children and Adults (PALISADE); fda.gov. https://clinicaltrials.gov/ct2/show/NCT02635776. Updated August 19, 2019. Accessed June 11, 2020.

17. Vickery BP et al. AR101 Oral Immunotherapy for Peanut Allergy. *N Engl J Med.* 2018;379(21):1991-2001. doi:10.1056/NEJMoa1812856

18. Eosinophilic Esophagitis (EOE). Aaaai.org. https://www.aaaai.org/conditions-and-treatments/related-conditions/eosinophilic-esophagitis#:~:text=Eosinophilic%20(e%2Do%2Dsin%2Do,inner%20lining%20of%20the%20esophagus. Updated February 24, 2020. Accessed May 15, 2020.

19. Hill DA, Dudley JW, Spergel JM. The prevalence of eosinophilic esophagitis in pediatric patients with IgE-mediated food allergy. *J Allergy Clin Immnol Pract.* 2016; 5(2):369-375. doi:10.1016/j.jaip.2016.11.020

20. Wagener D. FDA Approves Palforzia, the First Medication for Peanut Allergy. GoodRx.com. https://www.goodrx.com/blog/fda-approves-palforzia-first-peanut-allergy-medication/ Published February 19, 2020. Accessed June 7, 2020.

EXPLAINED ANSWERS: Active Learning Patient Case

1. Answer: C.

Children who either have severe eczema *(Answer C is correct)*, egg allergies, or both should be evaluated for peanut allergies *(Answer B is incorrect)*. Food allergies can develop at any age, but most often develop in the first two years of life *(Answer A is incorrect)*. The NIAID/NIH clinical guidelines specifically recommend screening for children at increased risk. Universal screening of all children is not recommended *(Answer D is incorrect)*.

2. Answer: D.

Palforzia is contraindicated for patients with uncontrolled asthma or esophageal diseases due to increased risk of adverse effects *(Answer D is correct)*. Patients with multiple accidental exposures may derive the most benefit from treatment *(Answer B is incorrect)*. Lack of health insurance may be a deterrent to treatment given the high cost of therapy but is not a contraindication *(Answer C is incorrect)*. Similarly, patients with only mild to moderate reactions are still candidates for PAP-dnfp (Palforzia) treatment but may find the risks of therapy to outweigh benefits *(Answer A is incorrect)*.

3. Answer: D.

There are many lifestyle changes that must be considered altered when initiating treatment with Palforzia to best prevent allergic reactions. This includes exercise habits, amount of sleep, and intercurrent illnesses, which may affect the absorption of PAP-dnfp. But it has not been shown that these are correlated with the risk of developing EoE *(Answer B is incorrect)*. The patient must continue daily PAP-dnfp dosing to maintain desensitization. Re-exposure to peanut allergens after treatment discontinuation will likely lead to allergic reaction but rebound reactions have not been demonstrated *(Answer A is incorrect)*. PAP-dnfp is produced in FDA-monitored facilities and subject to quality inspections but does not claim to use organic peanuts and has numerous risks associated with its use *(Answer C is incorrect)*. While PAP-dnfp treatment has demonstrated ability to increase the threshold for unintentional exposure to trigger a severe allergic reaction for many patients, the risk of experiencing an anaphylactic event still exists *(Answer D is correct)*.

4. Answer: B.

PAP-dnfp capsules should be emptied and mixed into room temperature or refrigerated semi-solid foods for administration *(Answer B is correct)*. It should never be mixed with a liquid or exposed to heat *(Answer A is incorrect)*. Unopened doses should be stored in the refrigerator *(Answer D is incorrect)*. Also, storing medication in her purse may lead to unintentional peanut exposure outside of scheduled PAP-dnfp and should be avoided. Patients taking PAP-dnfp are still at risk of anaphylactic reactions and should carry epinephrine with them at all times *(Answer C is incorrect)*.

5. Answer: A.

Phase Two Up-Dosing consists of 11 dose levels that are administered over a course of 22 weeks *(Answer A is correct, Answers B, C, and D are incorrect)*. Titration to the next dose level occurs on a bi-weekly basis. In-office clinician visits are required for the first dose of each level and patients must show no signs of adverse effects prior to administering the remaining doses.

Ubrelvy Tablet: New Drug Update *continued from page 13*

5. Dodick DW, Lipton RB, Ailani J, et al. Ubrogepant for the treatment of migraine. *N Engl J Med*. 2019;381(23):2230-2241. doi:10.1056/NEJMoa1813049
6. Holland PR, Goadsby PJ. Targeted CGRP Small Molecule Antagonists for Acute Migraine Therapy. *Neurotherapeutics*. 2018;15(2):1-9. doi:10.1007/s13311-018-0617-4
7. Lexicomp. Accessed October 10, 2020. http://online.lexi.com.proxy-es.researchport.umd.edu/lco/action/doc/retrieve/docid/patch_f/6899789?cesid=0ZCQEoOHSQi&searchUrl=%2Flco%2Faction%2Fsearch%3Fq%3Dubrelvy%26t%3Dname%26va%3Dubrelvy#adr
8. Planning for Pregnancy | Preconception Care | CDC. Accessed October 10, 2020. https://www.cdc.gov/preconception/planning.html
9. Kumar A, Kadian R. *Headache, Migraine Prophylaxis*. StatPearls Publishing; 2018. Accessed October 10, 2020. http://www.ncbi.nlm.nih.gov/pubmed/29939650
10. Ha H, Gonzalez A, Rosa S. *Migraine Headache Prophylaxis*. Vol 99.; 2019. Accessed October 10, 2020. www.aafp.org/afpAmericanFamilyPhysician17https://familydoctor.org/condition/migraines/.
11. Kelman L. The triggers or precipitants of the acute migraine attack. *Cephalalgia*. 2007;27(5):394-402. doi:10.1111/j.1468-2982.2007.01303.x
12. Silberstein S, Holland FS, Freitag F, Dodick DD, Argoff C, Ashman E. *Evidence-Based Guideline Update: Pharmacologic Treatment for Episodic Migraine Prevention in Adults Report of the Quality Standards Subcommittee of the American Academy of Neurology and the American Headache Society.*; 2012. www.neurology.org
13. Woolf CJ, Wall PD. *Relative Effectiveness of C Primary Afferent Fibers of Different Origins in Evoking a Prolonged Facilitation of the Flexor Reflex in the Rat*. Vol 6.; 1986.
14. Navratilova E, Behravesh S, Oyarzo J, Dodick DW, Banerjee P, Porreca F. Ubrogepant does not induce latent sensitization in a preclinical model of medication overuse headache. *Cephalalgia*. 2020;40(9):892-902. doi:10.1177/0333102420938652
15. Lipton RB, Bigal ME, Ashina S, et al. Cutaneous allodynia in the migraine population. *Ann Neurol*. 2008;63(2):148-158. doi:10.1002/ana.21211
16. Goadsby PJ, Tepper SJ, Watkins PB, et al. Safety and tolerability of ubrogepant following intermittent, high-frequency dosing: Randomized, placebo-controlled trial in healthy adults. *Cephalalgia*. 2019;39(14):1753-1761. doi:10.1177/0333102419869918
17. Ubrelvy [package insert]. Madison, NJ: Allergan USA, Inc.; 2020.
18. Ubrogepant. Lexi-Drugs and AHFS [database online]. Lexi-Comp, Inc; July 31, 2020.

Delving into the Practice of Solid Organ Transplant at UMMC *continued from page 14*

or are at a high risk for graft dysfunction. In addition, the team is actively involved in protocol development, research, and medication use evaluations, practicing at the top of their licenses and advancing the profession of pharmacy.

While the pharmacists deliver exceptional care to their patients, they are also deeply invested in precepting. Whether in a formal or informal setting, they regularly provide education to medical and nursing staff, residents, and students. Throughout the year, they also take on final-year APPE students from schools of pharmacy, affording students the opportunity to round on an interdisciplinary team, to shadow in the operating room, to present cases, topic discussions, journal clubs, and more.

In addition to leaving an impact through experiential learning, the team has also recently directed its focus to academia. As of Spring 2020, UMMC transplant pharmacists have united with transplant clinical pharmacy specialists from The Johns Hopkins Hospital and faculty from the University of Maryland School of Pharmacy to offer the Pharmacotherapy of Solid Organ Transplantation elective. The course delves into the pharmacotherapeutic considerations essential to caring for transplant recipients and aims to give student pharmacists unprecedented exposure to the fundamentals of immunology, immunosuppression, and the management of complications post-transplantation.

As a practicing pharmacist or a pharmacy student, we must recognize that every institution differs in their patient population, policies, and practice model, and the workflow at the University of Maryland Medical Center is just one variation. CPAs and positive provider relationships take time to develop and integrating pharmacy into the practice of an entire health system is no easy feat. It is most important to identify areas of improvement within your own practice and build upon those needs in a way that fits your organization.

For student pharmacists considering a rotation in solid organ transplant, this field is an exciting conglomerate of critical care, surgery, ambulatory care, infectious disease, and everything in between. Solid organ transplant is a unique area where pharmacists are a valuable resource and experts in managing drug-drug interactions, renal dose adjustment, and graft dysfunction. During this rotation, you will encounter many opportunities for multidisciplinary collaboration, protocol and research development, patient education, and much more. You are certainly not expected to know everything, and as long as you focus on the potential for growth for pharmacists, I guarantee that you will thoroughly enjoy this learning experience. ●

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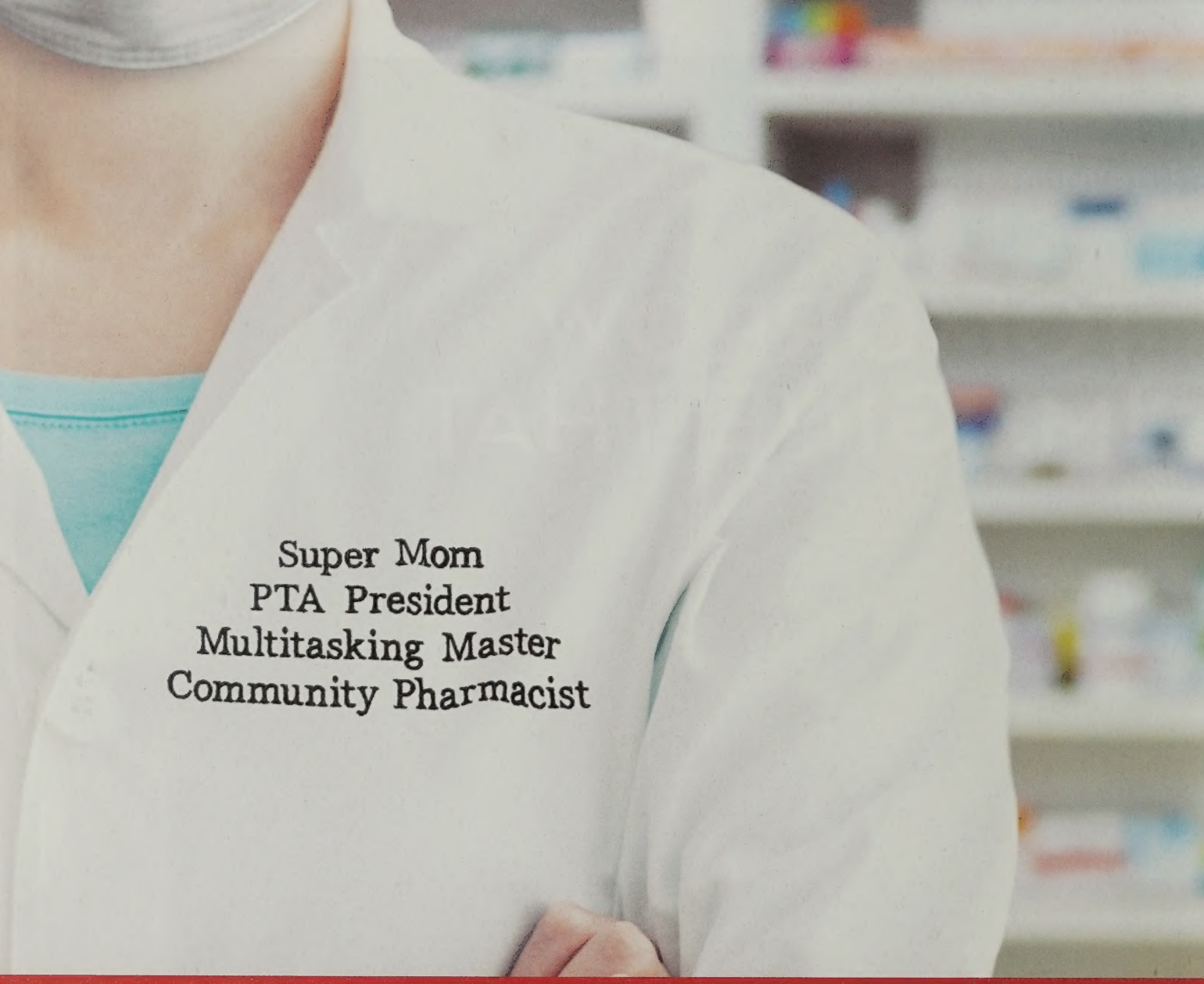

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